



E

S R

29

CHARLES BUTLER, Vicar of Wootton, 1600-1647

Father of English Bee-keeping

and

Celebrated Philologist



*The Church of Wootton St. Lawrence
as it was in Butler's time*

CHARLES BUTLER

A Likeable Hampshire Worthy

Charles Butler earned a place in the annals of three contemporary historians : John Aubrey, Thomas Fuller, Anthony à Wood : and his five books were well received in University and Court circles in the reigns of James I and Charles I. These books dealt with logic, bee-keeping, theology, grammar, and music. His versatility was matched by the vitality of some of his forward-looking ideas, which still claim attention. In 1913 a book appeared in Germany on Butler's philology. In 1925 the *Musical Times* drew attention to his unique bee-music. In 1952 a natural history journal in America is publishing instalments of a work on Butler and his descendant, Gilbert White, of Selborne. It is not given to many men to reach eminence in so many ways as did Charles Butler, author, schoolmaster, and devoted country parson. Thomas Fuller included him in "The Worthies of England" in 1662 : and fifty-four years of his long life were spent in and around Basingstoke.

A Musician, Schoolmaster, and Country Parson. Ambrose Webbe, Vicar of St. Michael's, Basingstoke (1597-1648), was probably responsible for bringing Butler to North Hampshire, because both were contemporaries at Magdalen College, Oxford, both came to this neighbourhood in the same year, and both proved to be convinced Anglicans. Butler bade farewell to Thomas Pygot, Knight, in a note dated at Oxford in May, 1593. From 1579 onwards he had been a chorister at Magdalen, and an industrious student proceeding M.A. in 1587. He probably remained as a teacher, for he had written there a school-book, "The Logic of Ramus," although it was not published until 1597 in his Basingstoke days. It is not unlikely that Thomas Pygot was related to Richard Pygot, a musician-monk, pensioned at the dissolution of the monasteries and already a member of the Chapel Royal. If so, this may be a link in Butler's musical interests.

There is no record of Butler's ordination either at Oxford or at Winchester; but the first see was vacant, and no ordinations are recorded in the Bishop's registers at Winchester from 1593 for many years. He was appointed in 1593 Rector of Nately Scures, with its tiny 12th-century Church, four miles to the east of Basingstoke : and two years later he became Master of the Holy Ghost School on the north side of that town, with a stipend of £12 a year. He was the most outstanding of all the Elizabethan Schoolmasters at Basingstoke, for his school-book, "**The Logic of Ramus**" became a "best seller," used in schools and the University of Oxford "with love and liking." Butler was the English Ramus, for he spread here the views on logic taught by Pierre de la Ramé (1502-70) in France, whose breach with the accepted views of Aristotle aroused such hostility that his foes threw him from his window to the daggers of the mob below in the Massacre of St. Bartholomew's night. It is fitting that Butler's name is lifted high above old Basingstoke, inscribed on the 13th-century Tower wall of the Holy Ghost ruins, for that wall is all that remains of his School. Its modern counterpart, Queen Mary's Grammar School, is nearby; the Head Master like Butler is styled "Chaplain of the Holy Ghost School"; the badge includes "The Dove," and the motto is "Spiritus Nolite Extinguere," both dear to Butler. In 1600 he resigned his Rectory and Schoolmastership to become Vicar of Wootton St. Lawrence, which Anthony à Wood described as a "poor Vicarage, God wot, for so worthy a scholar." Butler retained a connection with Ambrose Webbe and St. Michael's, for in 1622 the Basingstoke Churchwardens' accounts record : "received of Charles Butler for his wife's seat to sit in the 8th seat in the south side range, where widow Edwards sat, 16d." Butler proved to be a painstaking Vicar of Wootton in every way until his death forty-seven years later at the age of 88 or thereabouts, when he was buried in a nameless grave in the chancel.

The Four Books, written at Wootton, on Bees, Theology, Grammar, Music (1609-36).

1609. "The Feminine Monarchy, or History of Bees." Dr. H. M. Fraser, an authority on Butler, writes in the *Bee World* in 1950, "no-one has ever tried to replace this classic bee-book; the author was a ripe scholar, who possessed one of the most powerful intellects, which have ever engaged in bee-keeping." Mr. Gerald Hayes in the *Musical Times* in 1925 says : "this is not only a manual for the bee-keeper, but is lifted far above that level with an insight and a beauty, which render it worthy of a place beside the famous work of a modern poet." Chapter V contains the four pages of bee-music at swarming time, sounds of the bees set to their equivalent musical notes: and the amazingly patient observer, Butler, writes : "I am sure, if I miss, I miss but little" of these sounds. Chapters IV and VI give Butler's discoveries of the male sex of the drones, and the wax scales which form into the comb. His cautious observations enabled him confidently to part company with the host of ancient bee-writers on various points : but this same caution hindered him from advancing suggestions, which might well have brought him to one of Nature's astounding facts. This fact was that "the queen-bee after a single traffic with a drone continues to produce fertile eggs for the rest of her three or four years of life !" The book "travelled into the most remote parts of this great Kingdom of Great Britain, and was entertained of all sorts, both learned and unlearned." In 1623 a second edition had a foreword in verse by Dr. John Hammond, Royal Physician to James I. In 1634 the third edition was boldly written in Butler's new phonetic spelling ("Feminin Monarki"), with a foreword in verse by George Wither, of Bentworth, whose praise soars in the final lines, "Butler, he'll say (who these thy writings sees) Bees counsel thee or else thou counselest Bees." This edition was dedicated to Queen Henrietta Maria : and so arose a custom whereby all great bee-books were dedicated to Queens and never to Kings (Warder's to Queen Anne; T. Wildman's to Queen Charlotte; Bevan's to Queen Victoria).

1625. "The Marriage of Cousins" was a work of considerable theological learning, proving that such affinity was no bar to marriage; and Dr. Prideaux, Vice-Chancellor of Oxford University, said that it was the best ever written on the subject. It aroused widespread notice. It arose out of the marriage in Wootton Church of Butler's son, William, to a cousin, Mary Butler, in 1624.

1633. "The English Grammar," signed "Wotton, Sept. 11, An. D. 1633" was "graciously received of His Grace's sacred hands" i.e. by Charles I. The chaotic spelling of his times led Butler to invent a system of spelling words in line with their accepted sounds, and also place a number of additional letters representing these sounds in the alphabet. This phonetic spelling was so drastic, that it hindered the spread of his books, agitated the great Dr. Johnson 122 years later in the Preface to the Dictionary (1755), and has aroused interest in our own times. Butler, as a spelling reformer on less drastic lines, might well have produced lasting effects on the English language.

1636. "The Principles of Music." This was the only book on the theory of music written in the reign of Charles I, to whom it was dedicated. Butler used his phonetic spelling, regardless of convention. Two early compilers of our musical history take note of his book: Hawkins describes it as "learned and valuable," and Burney says, "this book contains more knowledge in a small compass than any other of the kind in our language." In Book II he deals with musical instruments, the behaviour of the choir, the Puritans' objections to music used in Church and for such purposes as dancing. He insists that Church music can be used as an outpouring of the Spirit, and that in every Church one should aim at perfection. As to dancing and similar uses of music he concludes, "there is no sufficient cause that we should wilfully deprive ourselves of these permitted comforts." His last written words occur here, and indicate the background of piety, honest thought, and conscientious living, which ennoble Charles Butler, the country parson. "Live Soberly, Righteously and Holily; Holily in respect to God; Righteously in respect of our Neighbour, Soberly in respect of Ourselves."

The Faithful Vicar of Wootton for nearly Half-a-Century (1600-1647). For 43 years Butler wrote his entries of baptisms, weddings, and burials in our Register in Latin and in neat round handwriting. For 40 years our splendid Churchwardens' Accounts give us glimpses of his concern for the fabric and furnishings of Wootton Church, and the worship offered there. The Civil War put a stop to both records in the early forties of the 17th century.

BUTLER'S FAMILY

The Register tells us of Butler's three sons, William, Edmund, Richard, baptised at Wootton: Edmund's only son, Charles, and three grandsons were also baptised here, and so were Richard's three sons and only daughter. Butler's daughter, Briget, was buried at Wootton aged nine months in 1605: and his other daughter, Elizabeth, baptised in 1612, and married on St. Valentine's Day in 1633 to the Reverend Richard White, curate of Eastrop, was his "honey girl." Butler gave her this name, so says John Aubrey, because he had put aside some hives of bees at her birth, and these yielded a marriage portion of £400! Elizabeth's great grandson was Gilbert White, the famous naturalist and country parson at Selborne. Her husband became Rector of Worting in 1639, and Vicar of Basingstoke 1661-85. Finally there is the record of Mrs. Butler's death at Wootton in 1628; and Butler was a widower for nearly 20 years. There was poverty at Wootton Vicarage: and 90% of the benefices in England were valued at less than £26 a year. The slender income originally fixed for a celibate no longer matched the needs of a married clergy. Butler's habit of experimenting in the fields of Nature probably proved expensive, for when he was observing the habits of the silkworms, he says sadly: "I doubt me if she will never quit cost." Probably Mrs. Butler made up for this loss by her work in her stillroom, where honey was turned to many uses, as ointment, plasters and good old mead. Bee-keeping probably was profitable, for "whoso keepe wel sheepe or bee'n, sleepe or wake, their thrift cooms in." The two fields named Honeyfield and Waxhanger within a few hundred yards of the Vicarage may hold memories of Butler's time.

THE WITHERS OF MANYDOWN

The Register also reminds us of the great house of Manydown, one mile to the south-west of the Church, the home of the Withers from 1389. Squire John Wither was buried by Butler in 1620; and his grave-cover in the chancel bears lovely lettering and armorials. His gift, a fine silver communion cup and cover-paten dated 1625, was first used by Butler. Our oldest mural tablet near the south door is in memory of his daughter-in-law, Susanna Wither, who was buried with three of her children in the "Church Ile" in 1632. His son, Richard, gave a new Bible, the noble Authorised Version, in 1628 in memory of a brother, James Wither, Fellow of New College, Oxford, who died there in the previous year. His nephew, George Wither, of Bentworth, wrote the first Anglican hymn-book, "Hymnes and Songes of the Church," in 1623 with a glorious treasury of tunes by Orlando Gibbon; and it is likely that the music-loving Butler would have these sung by a choir in the west gallery with its "pare of new staires" set up in Wootton Church in 1576. Squire William Wither succeeded his father, John, at Manydown, and became a prominent Parliamentarian, dying in 1653, six years after Butler's death. The Register records no less than 14 Baptisms, 3 Weddings, and 9 Burials connected with the Wither Family in Butler's time.

WOOTTON CHURCH

The Churchwarden's Accounts dating back to 1558 were bound in a 14th-century parchment cover; and the careful Butler added the present leather binding in 1630. They show how thorough he was in keeping the Church up to a sound repair level for forty years beginning with "the new makynge of the east ende of the north ile," and involving the glazier, painter, shingler, tiler, mason, brick-burner, carter, carpenter, sawyer, blacksmith, plumber, leather-worker. Goodwife Mortimer was paid "for making clean ye Church"; but the village bellringers were voluntary, and were paid only on special occasions, such as in 1610 when James I passed by. Four bells were cast in 1625 to replace three mediæval bells (ye grete, medell, litell bells) and one cast in 1604. Their inscriptions read: "Our Hope is in the Lord"; "Let our Hope be in the Lord"; "Prayse ye the Lord"; "The Bell was made 1625." Butler's orderliness is shown by a note on the cover of the Accounts with the heading "1600 Ordo quo coemiterii repagula sunt struenda," giving a list of those responsible for each section of the Churchyard fences, the Vicar being charged with the repair of the gate.

The Church interior was a scene of order and simple beauty; whitened walls; colourful Royal Arms with the Commandments and sentences of Scripture above the round Norman chancel arch; a pulpit with a silk cushion and seats for the Vicar and the Clerk; a Communion table overspread with a rich carpet falling on all sides in lovely folds, and fenced off in dignified isolation in the chancel; a "cofer" nearby with Butler's clean surplice and new service books; and in the nave were seats for they were mended in 1613. Much of all this was provided in Butler's time. "Morninge Praier" was offered every Sunday; and the Communion was celebrated fully at each quarter, Nueyeerstide, Easter, Trinitie, Alhollantide. Butler's solicitude is shown by the provision of Communion for his scattered parishioners, let and hindered by miry roads from Ramsdel, Up Wotton, Est Okle, on Palm Sunday, Maundy Thursday, Easter Eve and Easter Day. He discontinued the mediæval custom of providing Haliloaf, which was blessed at the Mass and distributed in the parish to the poor by the Clerk. In its stead the money was collected yearly at Easter from 1601 for "Bred and Wyne" for the Communion, each parishioner being charged 4d., 3d., 2d., or 1d. In 1624 Butler decided that it was fairer for the householder to pay for all his servants; and that these should be exempt. Butler gave relief to the strangers plodding through the parish from the Churchwardens' funds. We catch glimpses of these unfortunates, the Irish, the two "lincolnshier travellers," the "poor man that had his hous burnt," in their Accounts. The Accounts tell us of the village fair, called Kingales, with its feasting, dancing, play-acting, games such as pewter and tronks resembling our hoop-la and bagatelle. The proceeds helped to pay for the Church repairs. Charles Butler's eyes held the merry twinkle of the likeable cavalier, as well as the wise depths of the saintly Vicar. Thomas Fuller assures us that Butler was "a pious man, a painful (i.e. painstaking) preacher, and a solid divine."

Closing Shadows of the Civil War. His piety and learning saved him from ejection in 1643, when the Puritan Long Parliament abolished the office of bishop, and Walter Curle, Bishop of Winchester, was besieged in his house, escaping in a dung cart, and in 1645 when Archbishop Laud was executed, and the use of the Prayer Book was forbidden under pain of fine and imprisonment. Manydown was quartered with Parliamentary troops under Captain Guillaume in 1643, and Sir William Waller himself came to Wootton in that year. Squire William Wither was a member of the Commission for Public Safety authorised to seize warlike stores for Parliament. Butler was aged; and probably his son-in-law, Richard White, Rector of Worting nearby, helped with the duties at Wootton. Our faithful old Vicar "took his farewell of this world on March 29th, 1647, aged 88 years or thereabouts, and was buried in the chancel of the Church of Laurence Wootton" in a nameless grave amid the heartrending scene of Civil War. His incredible patience as an observer in the fields of Nature, his diligent thoroughness as a scholar, and his painstaking concern for the House of God, make him a bright and shining light in those dark days. His name on the weather-beaten old wall among the Holy Ghost ruins at Basingstoke, and his nameless grave in the old village Church at Wootton remind us of his own words: "Ah! injurious Time!"

The Coronation of Queen Elizabeth II turns our thoughts to Charles Butler, a likeable Hampshire Worthy, whose long and useful life began in 1560 at the threshold of the first Elizabethan Age. A Coronation Commemoration in the form of a stained glass window of artistic merit, representing Charles Butler, is to be placed in the north aisle of Wootton St. Lawrence Church. Your gift in memory of Wootton's Great Vicar will be welcomed, and may be sent to:—

COLONEL A. S. BATES, D.S.O.
Honorary Treasurer, Charles Butler Memorial Fund
Manydown Park
Basingstoke

Note.—The Vicar, Rev. F. R. Money, acknowledges with gratitude the kindness of Dr. H. M. Fraser, of Northwood, Middlesex (the authority on the life and works of Charles Butler), who placed many notes at his disposal with permission to use them.

159446





Charles Butler was born at one of the
Bycumbes (Great Wycombe I suppose)
Bucks. entered a Student into Magdalen
Hall in the Year 1579. took a degree of M.A. &c
He wrote & published the *Feminine Monarchy*
or a *Treatise on Bees* Ox 1609 oct.

Lond 1623. Ox. 1634 qu, translated into
Latin by Richard Richardson sometimes
of Emmanuel Coll. Cambr: now or lately an
Inhabitant of Brixworth in Northamptonshire.
Lond 1673 oct. In this version he left out
some of the ornamental Emblematical
part of the English copy & hath with the
Authors scattered & intermixed his own
observations on Bees In what of note
he had either heard from men
skilful this way or had read in other
books. But this last translation being
show in the sale there hath been
a new title put to it and so called therein
to be printed at Oxon 1682 oct.
(Wood's *Athene Oxonienses* p 51
John Ed. 1791.)

The Rev Charles Butler was born
at High Wycombe in Buckinghamshire 1559.
was educated at Oxford. Bible Clerk
at Magdalen College. Master of the
Grammar School at Basingstoke.
Circa 1600, Vicar of Laurence Wootton
in Hampshire & there died A.^o 1647.
He published *The Feminine Monarchy*
or a *Treatise on Trees* 1609. 8.^{vo} - 1623. 8.^{vo} -
and 1634, 4.^{to}

This very curious book is quoted by
Dr Johnson in his Dictionary ~~& Rhetorica~~
~~lib. duo, 1610~~

He published also. *Rhetorica lib. duo* 1610.

De propinquitate matrimonium impedita
regula generalis 4.^{to}

Oratorica lib. duo 4.^{to}

English Grammar 4.^{to}

The principles of Music 4.^{to}

This last is highly praised by D. Mory.

(Gen Biog Dict)

(Watkins Biog.)



Authors referred to
pages
Ambrosius. 1. 2. 16.

Aristotle 2. 3. 5. 6. 10. 13. 20. 49. 53.
54. 55. 56. 57. 62. 77. 97. 101. 102. 103.
107. 116. 120. 135. 154.

Augustin. 13. 20.

Basil. 2.

Du Bartas 22.

Columella 57. 109. 149.

Claudian. 77.

Dodorus 11.

Diodorus 80.

Fernelius 11. 153. 154.

Gellius 16. 55.

Galen 106.

Homer 4.

Higinius 57.

Herodotus 59.

Lucretius 14.

Laertius 55.

Justinian 78.

Ptolomæus 29.

Jovius (Paul) 100.

Pictorius (Reagius) 140

Plantius (Guilielmus) 153. 154.

Pliny 1. 2. 3. 5. 6. 9. 10. 50. 57. 58. 97.
100. 104. 105. 106. 107. 116. 117. 120
121. 135.

Lucius (Laurentius) 131.

Sylvius (Jacobus) 153.

Thesaurus 78.

Virgil 2. 6. 20. 21. 42. 66.
77. 95. 105. 109. 110. 116. 123.
124. 125. 130

Virgil (Potho) 105.

Ovid 42.

Dr. Sudamou

Dr. George Doe



*Quatuor apum
ordines.*

Princeps.

Duces.

Plebs.

Inertes fuci.



*Miraris Arte conditas mirâ domos,
Opesq; regales in his reconditas?
SOLERTIA ET LABORE fiunt omnia.*

C. B.



THE
Feminine Monarchie :

OR

THE HISTORIE

Amorau Haggelt.
Alterius non sit, qui
Suus test potest
OF BEES.

Serius
S H E W I N G

Their admirable Nature, and Properties,
Their Generation, and Colonies,
Their Gouvernment, Loyaltie, Art, Industrie,
Enemies, Warres, Magnanimitie, &c.

T O G E T H E R

With the right ordering of them from time to
time : And the sweet profit arising thereof.

Written out of Experience

By

CHARLES BUTLER. Magd:

Plant: in Trucul: Aët: 2. Sc. 6.

Pluris est oculatus testis unus, quam auriti decem.

L O N D O N,

Printed by I O H N H A V I L A N D for Roger Jackson,
and are to be sold at his Shop in Fleetstreet, over
against the Conduit. 1 6 2 3.







THE PREFACE TO THE READER.



THE great Naturalist, to expresse the excellency of the nature of Bees, saith thus, *Inter omnia insecta principatus Apibus, & jure principua admiratio; solis ex eo genere hominum causa genitis.* Of all *insecta* the Bees are chiefe, and worthily to be most admired;

Plin. Nat. hist. l. 11. ca. 5.

being the only things of that kinde, which are bred for the behoote of men. The later part of which saying, although the delicate Silk-worme haue in some hotter Climates disproued; (for in the colder countries, such as is our Iland of *Britaine*, I doubt mee shee will neuer quit cost: and therefore is here to be entertained only of them, that doe more respect their pleasure, than their profit; and doe content themselues with the beholding of their queint worke, not expecting any further recompence for their expence and paines;) yet must she needs confesse the former, and wheresoeuer she meet the ingenious and laborious Bee, yeeld the precedence to her, as to hir Better. For the fruit of the Silk-worme serueth only to couer the body; but the fruit of the Bees to nourish and cure it: that is to be applied outwardly, this to be inwardly receiued: that for comlineffe and conueniency, this for health and necessity. But, to omit comparison, the worke and fruit of the little Bee is so great and wonderfull, so comely for order and beauty,

The Preface to the Reader.

Var. l. 3. c.
15.

Nat. Hist.
l. 11. c. 9.

beauty, so excellent for Art and wisdom, & so full of pleasure and profit ; that the contemplation thereof may well besee me an ingenious nature. And therefore (not without cause) are the Bees called the Muses Birds : *Apes cum causa Musarum esse dicuntur volucres.*

The loue of which did so rauish *Aristomachus* and *Philiscus*, that, as *Plinie* reporteth, they were pleased to spend most of their time in this pleasing businesse. *Ne quis* (saith he) *miretur amore earum captos Aristomachum Solensem duode sexaginta annis nihil aliud egisse; Philiscum vero Thasium in desertis apes colentem Agrium cognominatum: qui ambo scripsere de his.* *Aristotle* thought his *Historia animalium* vnperfect, vnlesse he had inserted a Tract of the Nature of Bees: of which he discourseth more at large, than he doth of any other liuing creature. *Plinie* likewise, in his *Naturalis historia*, is very copious in this argument. Besides whom, diuers other haue writen thereof: as *Columella*, *Varro*, *Palladius*, *Auerroes*. Yea the learned & graue Fathers of the Church, *S. Ambrose*, and *Isidore* haue thought it asubiect fit for their pens. Vnto which I may adde infinite others of later times, both in Latine and English.

But the many yeeres experiments & obseruations, which these great Bee-masters *Aristom.* and *Philiscus* had least in writing to posterity ; Time, ah iniurious Time, hath buried in obliuion. And for the rest that are extant, they seeme vnto me to rely more vpon the relation of others, than any certaine knowledge of their owne. Notwithstanding there are scattered in them, specially in *Aristotle* & *Plinie*, among many false and friuolous conceits, some true and profitable notes: which being found agreeable to experience, I haue here and there in this Treatise, as the matter requireth, for ornament and authoritie inserted. But the latter Writers, imitating the ancient where they thought good, chusing some of their directions, and refusing others,

The Preface to the Reader.

thers, doe, for the most part, vnluckily light vpon the worse: so that, being compared, they are no way matchable vnto them; whom by the aduantage of time they might haue surpassed. Among which *Georgius Pictorius* a learned Physician deserueth best, as hauing taken most paines in perusing the ancient Authors, and gathering their matter into his method. Whom one *T. H.* of *London* translating word for word into English, as well as he could, concealing the Authors name, aduentured to publish in his owne name. These and the like when a Scholar hath thoroughly read, hee thinketh himselfe thoroughly instructed in these mysteries: but when he commeth abroad to put his reading in practise, euery silly woman is ready to deride his learned ignorance.

Thomas Hill
(penes me.)

Wherefore considering how great the vertue and efficacy of the fruit of Bees is, both for the preserving, and restoring of mans health, I thought it not amisse to spend some by-time for my recreation, in searching out their nature and properties, their helpes and hinderances, that I might know how to doe good vnto them, which are so good for vs, and what is the due and right ordering of these delightful, profitable, and necessary creatures. And hauing to my contentment, though to my cost, in some sort obtained my desire, I was incited, euen by the rule of charitie, to communicate that to my neighbours and country-men, which I haue since found so beneficiall to my selfe: so that the Reader may now freely reape the fruit of that, which the Author hath deerely sown vnto him.

V. c. 10. p. 3.

The Philosopher intreating of the breeding of Bees, professeth himselfe vncertaine of their sex: and therefore, willing in this vncertaintie to grace so worthy a creature with the worthier title, he euery where calleth their gouernour *Βασιλεύς, Rex.* As many as followed him, searching no farther than he did, were content to say as he said. So that I am informed

*De generat.
an. l. 3. c. 10.*

The Preface to the Reader.

forced (vnlesse I will chuse rather to offend in *rebus*, than in *uocibus*) by their leaue and thine (learned Reader) to straine the ordinarie signification of the word *Rex*, and, in such places, to translate it *Queene*, sith the males heere beare no sway at all, this being an *Amazonian* or *feminine* kingdom. v.

V. c. 4. n. 11.

In distinguishing the times of the yeere, I vse the Astronomickall months, as most naturall and fitting to my purpose. v. Where note that by the name of each moneth, is commonly vnderstood the first day of the same moneth, (namely, wheresoeuer this preposition *At*, is set before it) except onely where it followeth, *In*, or *After*, or otherwise the sense doth plainly shew that it is spoken of the whole Moneth.

V. c. 3. n. 36.

When you haue once, for your satisfaction, perused this Booke, you need not afterward seeke farre for any thing therein, whereof you doubt: the *Index* of the Chapters or Contents of the Booke; and of the Marginall notes, or Contents of the Chapters will readily direct you. For example, if you would know the Spleeting of Hiuies, or the manner of Hiuing Bees; looking into the *Index* of the Chapters, you shall perceiue the one to appertaine to the Third, and the other to the Fifth; and running ouer the Contents of either Chapter, you shall finde the first to be the Tenth note, and the other the 53. Then turning to these Marginall Notes in the said Chapters, you haue in the Text ouer against them your desire.

Note also, that whereas you haue in the Margin, with these Marginall Notes, certaine References vnto other places of the Booke, for further explanation of those places against which they stand; *V.* signifieth *vide*, or *See*, *C.* with his number the Chapter, and *N.* with his number the Marginall Note. But if *N.* follow *V.* without *C.*; then doth it note some Note of the same Chapter.

The Preface to the Reader.

I am out of doubt that this Booke of *Bees* will in his Infancie lie hidden in obscuritie, as the Booke of *Tropes* and *Figures* did for a while goe vnregarded, without friends or acquaintance: but as that did by little and little insinuate it selfe into the loue and liking of many Schooles, yea of the Vniuersitie it selfe, where it hath beene both priuately and publikely read; (a fauour, which this Mother doth seldom afford to hir owne Children, lest haply she should seeme too fond ouer them:) so this will in time trauell into the most remote parts of this great kingdome of Great Britaine, and be entertained of all sorts both learned and vnlearned: although the *Muses Birds* are fittest for the *Muses*, and the knowledge of their long-hidden secrets was chiefly published for the *Muses* friends. *Quibus me, quicquid sum, et studia mea dico.* Wotton. May 30. 1623.

CHAR: BVTLER.

A

Ad



Ad Authorem.



*Q*ue natura Apibus, qua membra, scientia, sensus,
Virtutes, atas, ingenium, pietas,
Quæ statio, & sedes, soboles, examina, tecta,
His hæc condendi promptus ubiq; modus;
Quæ princeps, populus, regimen, respublica, mores,
Quæ sint arma, hostes, prælia, castra, duces,
Quam celeri campos gressu, sylvasq; peragant,
Quæ cellas fingunt arte, labore replent,
Quam profint hominum generi cœlestia dona,
Ut que magis profint quo moderanda modo;
Per te miranda hæc levium spectacula rerum
Mystica tot sæclis clausa reclusa patent.

*Aut a consilijs Apibus, Butlere, fuisti,
Aut a consilijs est Apis ipsa tuis.*

WHen I had view'd this Common-wealth of Bees,
Observ'd their Lines, their Art, and their Degrees:
As; how, beside their painefull Vulgar ones,
They haue their Prince, their Captaines, and their Drones:
How they Agree; how temp'rately they Feed;
How curiously they Build; how chastly Breed;
How seriously their Bus'nesse they intend;
How stoutly they their Common-good defend;

How

How timely their *Promissions* are provided;
How orderly their *Labors* are diuided;
What *Virtues* patterns, and what grounds of *Art*,
What *Pleasures*, and what *Profits* they impart:
When these, with all those other things I minde
Which in this *Booke*, concerning *Bees*, I finde:
Me thinkes, there is not halfe that worth in *Mee*,
Which I haue apprehended in a *Bee*.
And that the *Pismire*, and these *Hony-flies*,
Instruēt vs better to Philosophize,
Than all those tedious *Volumes*, which, as yet,
Are least vnto vs by meere *Humane-wit*.
For, whereas those but only *Rules* doe giue;
These by *Examples* teach vs how to liue.

Great God *Almighty* ! in thy pretty *Bee*,
Mine Eye (as written in small letters) sees
An *Abstract* of that *Wisdom*, *Power*, and *Loue*,
Which is imprinted on the *Heavens* about
In larger *Volumes*, for their eyes to see,
That in such little *prints* behold not Thee.
And in this *Workmanship* (oh Lord) of thine,
I praise thy *Wisdom*, and thy *Power* diuine.

And *Praise* deserues this *Author*; who hath chose
So well his *Times* of *Leisure* to dispose;
And in that *Recreation* to delight,
Which honour *God*, and vs aduantage might.
For, since our humane weakenesse doth require,
That in our serioust *Labours* we retire;
(Because vnlesse the String be sometime slacke
The strongest Bow will haue the feeblest backe)
What *Recreation* better can besit
Our graue *Dinines*; than (when the *Holy writ*
Is laid aside) in *Gods* great booke of *Creatures*
To read his *Wisdom*, and their vsefull *Natures*?

Thus doth our *Author*. And, not only thus;
But, like his *Bees*, makes hony too for vs.
And is contented that, to helpe vs thrive,
We should partake the profit of his *Hine*.

For which (*my share*) I thanke him : and for those
The *Muses-Birds* ; whose nature here he shoves.
And mauger such as will his *Paines* contemne,
The *Muses* thus, by me, doe honour them.

GEORGE WITHER.



Ad Carolum Butler.

A Ntè mel'è chartis prompsisti, ut Rhetor, apinum,
At nunc mellitas promis, ut Histor, apes.
Incipis ex apibus, sed & in mel desinis ipsum :
Suaviter inceptum suavius exit opus.

WARNERVVS SOUTH.





The Chapters, or the Contents of *this* B O O K E.

MY Booke of Bees I divide into ten Chapters.

- 1 The first, of the nature and properties of Bees, and of their Queen.
- 2 The second, of the Bee-garden, and Seats for the Hives.
- 3 The third, of the Hives, and the Dressing of them.
- 4 The fourth, of the Breeding of Bees, and of the Drone.
- 5 The fifth, of their Swarming, and the Hiving of them.
- 6 The sixth, of their Worke.
- 7 The seventh, of their Enemies.
- 8 The eighth, of Feeding them.
- 9 The ninth, of Remouing them.
- 10 The tenth, of the Fruit and Profit of them.

The Notes or the Contents of
the first Chapter, concerning the
nature and properties of Bees.

BEES yeeld great profit with small cost.
1 Euery country fit for Bees.

2 Bees abhorre idlenesse.

3 Bees haue a Common-wealth.

4 Their working, watching, fighting,
dwelling, diet, wealth, and young ones
are all in common.

5 Bees alwaies loyall to their Soueraigne.

6 Bees endure no government, but a Mo-
narchie.

7 A memorable experiment.

8 The description of the Queene-Bee.

9 Bees haue also inferior Governours or
Captaines.

10 Which are knowne by peculiar markes.

11 Two sorts of Bees.

12 The parts of a Bee.

13 Hir hernes.

14 Hir eyes.

15 Hirfangs.

17 Hir tongue, with the parts of it,

18 Hir foure wings.

19 Hir feet.

20 Hir two weapons.

21 Hirfangs commonly used against in-
secta.

22 Hir speere sometime.

23 Stinging present death to Bees.

24 The speeres commonly used against o-
ther creatures.

25 Haire and feathers cause the Bees to
sing.

26 Wooll and woollen do not offend them.

27 Fustian, Leather, and Velvet naught a-
mong Bees.

28 The Bees in their anger aime at the
head.

29 When any is stung, the company must
be gone.

30 The Bees haue the worst, when they
sing.

31 They lose their sting and entrals, and
consequently their liues.

32 The speere, of it selfe, pierceth deepe
when

when the Bee is gone.

- 33 How to prevent the paine & swelling.
- 34 Nothing but Time can cure their singing.
- 35 What things the Bee-master must avoid
- 36 The six properties of a Bee-master.
- 37 Safer to walke then to stand among Bees.
- 38 The fittest time to stirre about Bees.
- 39 In the heat of the day they are most angry.
- 40 How to be armed when the Bees are angry.
- 41 Bees dangerous to Cattell.
- 42 The Bees Senses.
- 43 Their sight dimme.
- 44 Their smelling very quicke.
- 45 Hearing and feeling.
- 46 Tasting.
- 47 Their Vertues.
- 48 Fortitude.
- 49 Prudence and knowledge.
- 50 A strange tale concerning the knowledge and deuotion of Bees.
- 51 Temperance.
- 52 Iustice.
- 53 Chastity.
- 54 Cleanlinesse.
- 55 The age of Bees.
- 56 The difference betweene the young Bees and old.
- 57 The office of the young Bees.
- 58 And of the old.
- 59 Bees wont eefsoomes to play.
- 60 They are soone kild with cold.
- 61 How to reuiue them.
- 62 The Bees excellencies.
- 63 Bees a chiefe exemplar of the diuine power and wisdom.

The Contents of the second Chapter, concerning the Beegarden, with Seats for the hiues.

- 1 Of fine things requisite in a Beegarden, the first is, that it be nigh at hand.
- 2 That it be safely fenced from cattell and winds.

- 3 The north & east fences should be high.
- 4 The South and West fence must be also good, but not so high as to bide the Sunne from the Hiues.
- 5 In rough winds the Bees need a skreene.
- 6 That it be sweet.
- 7 Neither very cold in winter, nor hot in Summer.
- 8 A grassie ground is best, but kept notte and dry.
- 9 Beset with trees and bushes.
- 10 Two sorts of Seats.
- 11 The benches not so good as single stooles
- 12 Swarmes may be set on Benches.
- 13 Wooden Stoles better than they of stone.
- 14 The size of stooles.
- 15 Which way the stooles should be set.
- 16 How neere to each other.
- 17 How neere to the fences.
- 18 Annus climactericus.
- 19 The Bees Register.
- 20 The stooles height.
- 21 How to befooited.

The Contents of the third Chapter, concerning the Hiues, and the Dressing of them, both before and after Hiuing.

- 1 Two sorts of Hiues.
- 2 Strawne Hiues with their inconueniencies and remedies.
- 3 Wicker Hiues with their inconueniencies and remedies.
- 4 Strawne Hiues best.
- 5 The fashion of Hiues.
- 6 The size of Hiues.
- 7 When Hiues are to be made & provided.
- 8 How Hiues are to be dressed before they receiue the swarmes.
- 9 The pruning of Hiues.
- 10 The spraying or spliecting of them.
- 11 The making of the Cop, and of the Spleets.
- 12 The seasoning of them.
- 13 The seasoning of an old Hime.
- 14 How Hiues are to be ordered when the Bees are in them.

- 15 The Hives alwaies well hackled.
- 16 How to make a Hackle.
- 17 The Cap of two sorts.
- 18 The wreathed Cap.
- 19 The platted Cap.
- 20 The bignesse of the Hackle.
- 21 The length of it.
- 22 The Bell or garth.
- 23 The buckle now & then to be taken off.
- 24 The Hives alwaies close cloomed.
- 25 Then seldome to be moved.
- 26 How a Hive lifted up is to bee set downe againe.
- 27 The Hivz-doore.
- 28 The Gate or Summer-doore.
- 29 Of the doore posts and the use of them.
- 30 The Winter-doore, or Wicket.
- 31 The use of it.
- 32 The Barre.
- 33 The use of it.
- 34 The Settle.
- 35 How to order the Bee-hives throughout the yeere.
- 36 The Months and Quarters of the Melissa; anyee.
- 37 SUMMER.
- 38 In GEMINI set the Doores wide open.
- 39 CANCER.
- 40 To make the Bees swarme.
- 41 To keepe them from swarming.
- 42 LEO.
- 43 How and when to kill the Drones.
- 44 HARVEST.
- 45 VIRGO.
- 46 To keepe the weaker Hives from robbing.
- 47 Set up the Winter-doores.
- 48 And keepe them shut till they offer to goe abroad.
- 49 The reared stalls now to be set downe againe.
- 50 In Virgo try whether the Bees will ling.
- 51 Now take the Combes.
- 52 LIBRA.
- 53 Try them againe in Libra also.
- 54 Now set up the Wickets to the best, &

keepe the rest shut till the Bees offer to goe abroad.

55 SCORPIO.

56 Continue the shutting and opening of the Wickets this moneth also.

57 How to dresse the Hives for Winter.

58 WINTER.

59 SAGIT. CAPRIC. AQUAR. three still moneths.

60 How the Bees spend their time in them.

61 The first sharpe weather in Capr. shut the Bees in.

62 And in pleasant weather let them loose, if it may be, once a fortnight.

63 The SPRING.

64 PISCES.

65 The first faire day in Pisces, set the Bees at liberty.

66 Now dresse their Troughs.

67 Cleanse the Stools.

68 And feed or drine light stalls.

69 ARIES.

70 The second chiefe robbing-time.

71 In TAVRVS, remove the Barres.

72 In GEMINI, the Winter-doores.

The Contents of the fourth Chapter, concerning the Breeding of Bees, and concerning the Drone.

1 The Drone no labourer.

2 Divers opinions of the Drones originall.

3 The Drone is the Male-Bee.

4 Divers reasons proving the Drone to be the Male.

The first reason is, that they are suffered in breeding-time onely.

5 The second reason is, that the Drones being taken away in breeding-time, the Bees breed no more.

6 The third reason is, that they are bred by the Bees.

7 The fourth reason is, that the Wasps and Doyres haue Drones, which are their males.

8 The breeding of Wasps by Drones.

- 9 The breeding of Drones by Drones.
- 10 The first reason is the apparent signes of their Sex.
- 11 Aristotles objections answered.
- 12 When the Bees begin to breed.
- 13 The chiefe time of breeding.
- 14 The first breed are females.
- 15 The manner of their breeding.
- 16 The Bee-seed is first turned into a Worme.
- 17 The Worme being dead groweth to the shape of a Bee, and then liueth againe.
- 18 The breeding of the Lady-Bees.
- 19 When the Drones are bred.
- 20 When they come abroad.
- 21 Two uses of the Drones.
- 22 Where they lie.
- 23 The male-Bees are subiect to the females.
- 24 When the Bees leaue breeding, and beat away their Drones.
- 25 The Bees compared to the Amazons.
- 26 They rid not their Drones all at once.
- 27 When forward stalks begin.
- 28 When the backward.
- 29 When full stocks that haue not swarmed.
- 30 When those that are ouer-swarmed.
- 31 Sometime the Bees cast out euen the white Cepheus.
- 32 Timely ridding of Drones a good signe.
- 33 Sometime they rid their Drones in the Spring.
- 34 And afterward breed new againe.
- 35 Sometime it is good to helpe the Bees in this worke.
- 7 The swarming-boures.
- 8 The two swarming months.
- 9 Raie swarmes.
- 10 Late swarmes.
- 11 Black-berie swarmes are seldom to be kept.
- 12 A prime swarm & an after swarme.
- 13 A stall may cast foure times.
- 14 Diuers causes of breaking the prime swarme.
- 15 One prime swarme worth two after-swarmes.
- 16 The vulgar Bees appoint the rising of the fore-swarmes, and that upon seuerall grounds.
- 17 Five signes of the first swarming.
- 18 The signes of present swarming.
- 19 To lie forth continually is a signe they will not swarme.
- 20 The causes of their lying forth.
- 21 The remedy and meanes to make them swarme.
- 22 What is to be done to those that by no meanes will swarme.
- 23 How to replenish an ouer-swarmers.
- 24 How to double a stall.
- 25 How to drine all the Bees into the new hie, and so to take the old.
- 26 The signes of after-swarmes.
- 27 The rising of the after-swarmes is appointed by the Rulers.
- 28 The Bees Musicke.
- 29 The Princes part.
- 30 The Queenes part.
- 31 The other Ladies parts.
- 32 In the Bees song are the grounds of musicke.

The Contents of the fifth Chapter, concerning the Swarming of Bees, and the Hiuing of them.

- 1 The parts of a swarme.
- 2 When you may see the Queen-Bee.
- 3 The swarme no younger then the stocke.
- 4 Many Drones in a swarm a good signe.
- 5 A kinde spring for swarmes.
- 6 Swarming weather.
- 33 Before swarming the voices come downe to the steele.
- 34 The manner of their swarming.
- 35 The prime swarme being broken, the next may call and swarme within the eighth day.
- 36 All the swarmes of one hie come within a fortnight.
- 37 What use there is of tinging the swarms.
- 38 What is doe if the swarme bee wayward.

- 39 Some swarmes provide them houses asorchard. 81 Set net a swarme nere an others hiving-place.
 40 And then they flie away directly to the place. 82 What to doe when the swarme is new hived.
 41 Vacua alvearia sient semper parata in Apiario. 83 How to remoue it in the evening.
 42 The hiving of Bees. 84 How to set it on his seat.
 43 When they are to be hived. 85 How to use it in the morning.
 44 The token of their flying away after they bee 86 Foule weatber the first day doth much discour-
 settled. rage a swarme.
 45 How to fit the Hives to the swarmes. 87 Foule weatber continuing doth make it droupe
 46 Better to under-bine a stall then to over-bine and die.
 47 Three things requisite to hiving. 88 A swarme may liue six daies without Ho-
 nie.
 48 The Mantle. 89 How to prevent the drouping and death of a
 49 The single Rest. swarme.
 50 The double rest. 90 How to cure a a drouping Swarme.
 51 The brush.
 52 What the Hiuer must doe.
 53 The manner of Hiving.
 54 Foure meanes of hiving a Swarme.
 55 How to hine a Swarme that lighteth upon a 1
 bough.
 56 Either high.
 57 Or low.
 58 How if it light upon a high tree.
 59 How if upon the body of a tree.
 60 How if it light upon the top of any thing.
 61 How if it light in the middle of a dead hedge.
 62 How if it light on some hollow side of a stub or 2
 tree.
 63 How if it flie into a hollow tree.
 64 How if it light upon another Hiue.
 65 The swarme is alwaies to be kept together, lest 3
 the Bees kill one an other.
 66 The swarme to be set nere the lighting-place.
 67 What to doe if a swarme part.
 68 Vniting of swarmes is profitable.
 69 The manner of vniting.
 70 Another way.
 71 Two speciall inconueniencies to bee awoided in 4
 this worke.
 72 1. Superfluous multitude.
 73 2. Ciuill warre.
 74 To prevent the first.
 75 To prevent the second.
 76 When most danger is.
 77 A storie of a deadly feud.
 78 The causes of a swarmes going home againe.
 79 How to stay them.
 80 How to keepe them from other Hives.

The Contents of the sixt Chapter, concerning the Bees worke.

- 1 Bees most industrious creatures.
 2 In three moneths they cannot worke.
 3 All the yeere after they lose no time.
 4 Three fruits of Bees labour.
 5 The first and ground of all is Wax.
 6 How Wax is gathered and wrought.
 7 How you may see the working of the combs.
 8 How much wax they bring at once.
 9 The admirable Architecture of their combs and
 cells.
 10 The Drone-combe.
 11 The Queenes cells are built single in diuers
 places.
 12 In fashion round.
 13 The common error anent these cells.
 14 The combs doe often change their hue.
 15 Wax is gathered only in foure months.
 16 Honey the second fruit is gathered in 9 moneths.
 17 Two sorts of Honey.
 18 How Ambrosia or grosse honie is gathered.
 19 Ambrosia is the Schadon's food, as water their
 drinke.
 20 Being kept, it is soone corrupted.
 21 And then becommeth most vsuauory stopping.
 22 Much stopping maketh the Bees forsake their
 hives.
 23 This Ambrosia is commonly taken for wax.
 24 Which error is disprooued by sense.
 25 And reason.
 26 And by authority.

- 27 How the pure Nectar is gathered.
- 28 Two sorts of Nectar.
- 29 Line-hony of two sorts.
- 30 The finest ordinary is a kinde of Virgin-hony.
- 31 All hony coarser or finer, according to the soile.
- 32 The full-cells they close with wax.
- 33 Nectar and Ambrosia made of many simples,
whereof each nameth yeeldeth variety.
- 34 Dandelion continueth longest.
- 35 What Pisces yeeldeth.
- 36 What dries.
- 37 Taurus.
- 38 Gemini.
- 39 Cancer.
- 40 Of Honie-dewes.
- 41 The Bees worke myst earnestly in a Hony-dew.
- 42 What the Honie-dew is.
- 43 When the Honie-dewes are most frequent.
- 44 The time when they fall.
- 45 What Leo yeeldeth.
- 46 Virgo.
- 47 Libra.
- 48 Scorpio.
- 49 The Bees gather but of one kind of flower in one
voyage.
- 50 They gather hony out of poison.
- 51 What sort of Honie a stall may haue.
- 52 Bees haue necessary use of water.
- 53 Chiefly for their breed.
- 54 The making of the waiving-place.
- 55 How to finde wilde Bees.
- 56 Bee-troughs in Gardens profitable.
- 57 The forme and size of a Bee-trough.
- 58 The trough cover, and the use of it.
- 59 The seasoning and ordaining of the Bee-trough.
- 60 Bee-troughs of stime.
- 61 Sometime they water in the streets.
- 62 And after a showre, all about the garden.

The Contents of the seuenth Chap- ter concerning the Bees enemies.

- 1 The Bees enemies are many.
- 2 1. The Mouſe.
- 3 Remedies against the Mouſe.
- 4 2. The Wood-pecker.
- 5 3. The Titmouse.
- 6 The subtil practiſe of the Titmouse.

- 7 4. The Swallow.
- 8 Remedies against the Titmouse and Swallow.
- 9 5. The Hornet.
- 10 The Hornets sting is dangerous.
- 11 6. The Wasp.
- 12 When she feedeth upon Bees.
- 13 When she stealeth honie.
- 14 When they weare away.
- 15 In what yeere the Wasps are ſew.
- 16 In what yeere they abound.
- 17 Remedies against the Wasps.
- 18 7. The Moth.
- 19 8. The Snaile.
- 20 What harme the Moth doth.
- 21 9. The Emet.
- 22 10. The Spider.
- 23 11. The Toad.
- 24 12. The Frog.
- 25 13. The Bee the Bees greatest enemy.
- 26 Robbing or fighting of Bees in winter and sum-
mer but little.
- 27 In the spring more earnest.
- 28 The most spoile is made in Haruest.
- 29 What Stalls are most subiect to robbing.
- 30 What Bees are the robbers.
- 31 How they begin the fray.
- 32 Theeues of diuers Hines agree together in rob-
bing.
- 33 The description of the Bees battell.
- 34 In the battell is heard a sound like a drum and a
Fluit.
- 35 The assault of the enemy.
- 36 The defence of the besieged.
- 37 Neither side willing to yield.
- 38 The exercise of the defendants when the enemy
retireth.
- 39 The Wasps like Vultures.
- 40 The battell ended they bury their dead.
- 41 The second assault of the enemy.
- 42 When the true Bees yeeld, they goe with the Con-
querours.
- 43 Remedies.
- 44 To preuent robbing.
- 45 And to slay it, if you finde it in time.
- 46 When it is too late, and what is then to be done.
- 47 Robbing hurtfull also to the Theeues.
- 48 In what yeeres robbing is most rife.
- 49 Bees kill euer swarms that murder in the spring.

- 50 To prevent the death of poore swarmer.
- 51 Many killed in swarming.
- 52 14. The Weather.
- 53 In Summer heat hurteth the Bees.
- 54 In Winter the Sun-shine in frost and snow.
- 55 The Remedy.
- 56 Also the Easterne winds and great frosts.
- 57 And the cold continued maketh them sicke.
- 58 The raine rotteth the Hives.
- 59 The Remedy.
- 60 The greatest losse by weather is in the spring: for then infinite multitudes are beaten downe, laden and weary, with stormes and wind.
- 61 At the rising of a Cloud they poss home.
- 62 Yet will they goe a field in the midst of a warme shower.
- 63 How to restore Bees to life.
- 64 The wind causeth many to be drowned.
- 65 The Remedy.
- 66 The last and worst enemy of all.

The Contents of the eighth Chapter, concerning the Feeding of Bees.

- 1 In seven moneths the Bees spend of the stocke.
- 2 Three sorts of swarmer diversly provided.
- 3 The first sort.
- 4 The second.
- 5 The third onely are to be fed.
- 6 Stockes out of prooffe neuer to be fed.
- 7 Try your swarmer in Virgo.
- 8 What quantity of Honie is requisite.
- 9 Try againe in Pisces or Aries.
- 10 The Bee food.
- 11 Private feeding.
- 12 Carelesse feeding is slauing.
- 13 Publike feeding.
- 14 The first time of feeding.
- 15 The second time of feeding.
- 16 The third time of feeding.

The Contents of the ninth Chapter, concerning the Remouing of Bees.

- 1 Five things to be avoided in remouing Bees.
- 2 Remoue awaies in faire weather.
- 3 Not in Winter.
- 4 Nor in Summer.

- 5 The Autumn & Spring are fit times for remouing.
- 6 Libra the best month in all the yeere.
- 7 When to remoue a swarmer.
- 8 The time of the day, and manner of remouing.
- 9 The usuall manner of remouing.
- 10 Which is fit for poore flocks.
- 11 How a good stall is to be carried.
- 12 How a bad.
- 13 What to doe when they are brought home.
- 14 And what when they are seated.

The Contents of the tenth Chapter.

Part. 1. concerning the taking of the Combs.

- 1 The first kinde of Vindemiation.
- 2 The best time for killing Bees.
- 3 What flocks are to be taken.
- 4 The manner of killing Bees.
- 5 Sundry meanes to kill Bees.
- 6 The Bees being dead, house the Hive.
- 7 The second kinde of Vindemiation.
- 8 The time and manner of Drining Bees.
- 9 This Drining of Bees unprofitable.
- 10 The Honie taken is little and naught.
- 11 And the Bees driuen, sicke and poore.
- 12 Another kinde of drining.
- 13 At two times.
- 14 Drining in Virgo.
- 15 The manner of drining in Virgo.
- 16 How to helpe those driuen Bees that want.
- 17 Drining in Pisces.
- 18 How to reuine those that are chilled in drining.
- 19 A third kinde of Vindemiation.
- 20 Excision used at two times.
- 21 What part to be expected is uncertaine.
- 22 Excision ancient, but not profitable.
- 23 Neither first.
- 24 Nor second.
- 25 Specially for our Country.

Part 2. concerning the trying of Honie and Wax, and the making of Methe.

- 1 The Combes to be diuided into three parts.
- 2 Necessary instruments being first provided.
- 3 The dressing of the first part for Honie in two shoots.

4. The

- 4 The first shoot for fine ordinary Honie.
- 5 Or for Virgin-Honie, which is most fine.
- 6 Two sorts of Virgin-honie.
- 7 Come Honie got out by water or fire.
- 8 The second shoot for comfite Honie.
- 9 The dressing of the first part in one shoot.
- 10 The vulgar Honie grossly handled.
- 11 The working of Honie, and how to helpe it.
- 12 Divers Countries yeeld diuers kinds of Honie.
- 13 How to know good Honie.
- 14 Good Honie with standing waxeth hard and white.
- 15 The best of the Henie is in the bottoeme.
- 16 The dressing of the second part for Meth.
- 17 How to make the Meth-liquor in two shoots.
- 18 Two sorts of Hydromel, Mede and Methæglen.
- 19 When the liquor is strong enough for Mede.
- 20 What proportion of water to Honie.
- 21 How and how long the Must must be boiled.
- 22 The receipt of Spices.
- 23 How the Must is to be used when it is boiled.
- 24 The making of Methæglen.
- 25 The Queenes Methæglen.
- 26 The dressing of the third part for Wax.
- 27 First boile it with water.
- 28 Then straine it by pressing.
- 29 Next make the Wax into Balls.
- 30 Last of all melt it and cast it in a mould.
- 31 And keepe the cake from cracking.
- 32 How to know good Wax.
- 5 To much bonie unholtsme.
- 6 The different operations of raw and colled Honie.
- 7 Two waies to clarifie hency.
- 8 The quintessence of Honie.
- 9 The vertues of it.
- 10 The making of it.
- 11 The vertue of Honie in Confections.
- 12 Marmalade made of bonie.
- 13 Marshpaine.
- 14 Preserues.
- 15 Conserues.
- 16 Syrups.
- 17 Honie to be preserred before Sugar.
- 18 Honie good in outward Medicines.
- 19 A saluie for an old sore.
- 20 An other.
- 21 The properties and vertues of Mede and Methæglen.
- 22 Meth much used of the ancient Brittaines.
- 23 Whence Meth and Methæglen haue their name.
- 24 The properties and vertues of naturall Wax.
- 25 Artificiall Wax.
- 26 To make white Wax.
- 27 To make red Wax.
- 28 To make greene Wax.
- 29 Oile of Wax.
- 30 The vertues of it.
- 31 The making of Oile of Wax.
- 32 The vertue of Wax in compound medicines.
- 33 A Cerecloth.
- 34 A Cerecloth to refresh the Sinewes and Muscles.
- 35 A Cerecloth to comfort the stomacke.
- 36 A Cerecloth for the Wormes.
- 37 A saluie for a greene wound.
- 38 An other.

Part 3. concerning the vertues of Honie, Meth, and Wax.

- 1 The properties and vertues of Honie.
- 2 Against both outward and inward griefes.
- 3 For whom Honie is best.
- 4 English Honie.



THE FEMININE MONARCHIE,

OR

The Historie of B E E S.

CHAP. I.

*Of the Nature and properties of Bees, and of
their Queene.*



Mong all the Creatures which our bountifull God hath made for the vse and seruice of man, in respect of great profit with smal cost, of their vbiquitie or being in all Countries, and of their continuall labour and comly order, the Bees are most to be admired.

For first with the provision of a Hiue and some little care and attendance, which need be no hindrance to other businesse, but rather a delightfull recreation amid the same; they bring in store of sweet delicates, most hofesome both for meat and medicine, *Fructus apum ab omnibus desideratur & queritur: nec pro personarum diuersitate discernitur, sed indifcreta sui gratia regibus pariter ac mediocribus aequali suauitate dulcescit: nec solum voluptati, sed etiam saluti est.* And another saith, *Mille ad usus vita laborem tolerant & opera conficiunt*: as they well know, who know the rare vertues of Honie and Waxe: a taste whereof I will giue you in the last chapter.

Bees yeeld great profit with small cost.

Ambrosius
Hexamer. l. 5.
cap. 21.

Plin. nat. hist.
l. 11. c. 5.

B

Secondly,

2.

Euery Countrey
fit for Bees.

**strong & fertile.*

3.

Bees abhorre
iellennesse.

Plin. nat. hist.
L.II.c.5.

4.

Bees haue a Com-
mon-wealtb.

Nat. hist. li. II.
c. 5.

5.

Their working,
watching, fight-
ing, dwelling,
dyet, wealtb, and
young ones are all
in common.

Arist. hist.

anim.lib. 9.

cap. 40.

Ambr. Hex.lib.

5. cap. 21. & Ba-

sil. Hexam. Ho-

mil. 3.

6.

Bees abhaies loy-
all to their Soue-
raigne.

V. Prefat.

Virg. Georg.

V. c. 7. n. 27. &

42.

Secondly, whereas *non omnis fert omnia tellus*, some Coun-
treys yeeldeth one fruit, some an other; some beareth one
graine, some an other; some breedeth one kinde of Cattle,
some an other; there is no ground (of what nature soeuer it
be, whether it be hot or cold, wet or dry, hill or dale, wood-
land or champion, meddow, pasture, or arable: in a word,
whether it be barrell or barren) which yeeldeth not matter
for the Bee to worke vpon.

And thirdly, in their labour and order at home and a-
broad they are so admirable, that they may be a patterne vn-
to men, both of the one and of the other. For vnlesse they
be let by weather, weaknesse, or want of matter to worke on,
their labour neuer ceaseth. In admiration whereof, one saith,
*Quos efficacia industriaq; tanta comparemus nervos? Quas vi-
res? Quos ratione medius fidius viros?* And for their order, it
is such, that they may well bee said to haue a Common-
wealth, since all that they doe is in common, without any
priuate respect. *Nihil norunt nisi commune*: They worke for
all, they watch for all, they fight for all. In their priuate quar-
rels, when they are from the Hiue or common treasury, how-
soeuer you vse them, they will not resist, if by any meanes
they can get away. *Cum ruri sint, nec sibi invicem, nec ullis
alijs nocent; at verò apud suos alveos pugnant acerrimè*. Their
dwelling and dyet are common to all alike: they haue like
common care both of their wealtb and young ones. *Sola in
emni genere animantium communem omnibus sobolem habent,
unam omnes incolunt mansionem, unius patrie clauduntur limi-
ne, in commune omnibus labor, communis cibus, communis ope-
ratio, communis usus, & fructus est*. And all this vnder the
government of one Monarch, of whom aboue all things
they haue a principall care and respect, louing, reuerencing,
and obeying her v: in all things.

Præterea regem non sic Egyptus & ingens

Lydia, nec pepuli Parthorum aut Medus Hydaspes

Observant: rege incolumi mens omnibus una est:

Amisso rupere fidem; constructaq; mella

Diripere ipsæ, v: & crates solvere favorum:

Ille operum custos, illum admirantur; & omnes

Circumstant

and of their Queene.

C. I.

*Circumstant fremitu denso, stipantq; frequentes,
Et saepe attollunt humeris, & corpora bello
Obiectant, pulchramq; petunt per vulnera mortem.*

If she goe forth to solace her selfe, (as sometime she will) many of them attend her, guarding hir person before and behinde; they which come forth before her, euer now and then returning, and looking backe, and making withall an extraordinary noise, as if they spake the language of the Knight Marshalls men, and so away they flye together, and anone in like manner they attend her backe againe. This I may say, because I haue seene it: although the Philosopher be of another minde: *Reges, saith he, nunquam foris visuntur, nisi cum migratur.* If by hir voyce she bid them goe, they swarme: if being abroad she dislike the weather, or lighting-place, they quickly returne home againe: while she cheereeth them to battaile, they fight, *v*: while she is well, they are cheerefull about their worke; if she droope and dye, they will neuer after enioy their home, but either languish there till they be dead too, or yeelding to the Robbers, *v*: fly away with them *v*: *Rege mortuo moeret plebs ignava, non cibos conuehit, non procedit, tristi tantum marmure glomeratur circa corpus ejus.*

But if they haue many Princes, as when two flye away with one swarme, or when two swarmes are hied together; they will not be quiet till one of thē be cassiered: which sometime they bring downe that euening to the mantle, *v*. where you may finde her couered with a little heape of Bees: otherwise the next day they carie her forth either dead or deadly wounded. Concerning which matter, I will here relate one memorable experiment. Two swarmes being put together, the Bees on both sides, as their manner is, made a murmuring noise, as being discontented with the suddain congresse of Strangers: but knowing wel that the more the merrier, the safer, the warmer, yea, and the better prouided; they were quickly made friends. And hauing agreed which Queene should reigne, and which should die, three or foure Bees brought one of them downe betweene them, pulling and haling her as if they were leading her to execution: which I by chance percciuing, got hold of her by the wings, and with much adoe

Hist. an. 1. 9.
cap. 40.

Vid. c. 7. n. 35.

V. c. 7. n. 17.

V. c. 7. n. 42.

Nat. hist. li. 17.
c. 17.

7.

Bees endure no
gouernment, but
a Monarchie.

V. c. 5. n. 46. &
47.

8.

A memorable
experiment.

”

”

”

”

”

”

”

”

”

”

tooke

*Bees suruiue
not the loss
of their
Queene.*

*The
Union
of Swarms.*

“ tooke her from them. After a while (to see what would
 “ come of it) I put her into the Hiue againe : no sooner was she
 “ among them, but the tumult began afresh, greater then be-
 “ fore, and presently they fell together by the eares, fiercely
 “ fighting and killing one another, for the space of more then
 “ an houre together : and by no meanes would cease, vntill the
 “ poore condemned Queene was brought forth slaine and
 “ laid before the doore. Which done, the strife presently en-
 “ ded, and the Bees agreed well together.

Sometime when one swarme is put to another, though they do not fight, yet will they not agree of their choice in two or three daies, keeping their Queenes close on both sides. But then all this while they neuer be at quiet day nor night, nor once offer to work, vntill one of them being deposed, they be vnited in the other. *Vide plura super hac re c. 5. n. 74. 75. 76.*

Likewise if the old Queene bring forth many Princes (as she may haue six or seuen, yea sometime halfe a score or more, which superfluitie nature affoordeth for more suretie, in case some miscarrie) then, lest the multitude of Rulers should distract the vnstable Commons into factions, within two daies after the last swarme, yea sometime (when vnkinde weather keepeth him in ouer long) euen before he come forth, you shall finde the superfluous Princes dead before the Hiue: I haue taken eight of them vp together brought out of one hiue, when two were alreadie gone forth with their swarmes. For the Bees abhorre as well Polyarchie, as Anarchie, God hauing shewed in them vnto men, an expresse patterne of A PERFECT MONARCHIE, THE MOST NATURAL AND ABSOLUTE FORME OF GOVERNMENT.

Οὐκ ἔστιν πολυαρχία, ἐς υἱέγγος ἐστίν.

Hom. Il. a.

9.
 The description
 of the Queene-
 Bee.

The Queene is a faire and stately Bee, differing from the vulgar both in shape and colour : hir hacke is all ouer of a brighter browne : hir belly euen from the top of hir fangs, to the tip of hir traine, is of a sad yellow, somewhat deeper then the richest gold. Shee is longer then a hony-Bee, by one third part, that is, almost an inch long : shee is also bigger then a hony-Bee, but not so bigge as a Drone, although somewhat longer : hir head proportionable, but
 that

*When a Swarme
 is added to another
 the Bees put to death
 one Queen.*

Many Queens.

that it is more round then the little Bees, by reason hir fangs be shorter : hir tongue not halfe so long as theirs : for whereas they gather with the one, Nectar, with the other, Ambrosia ; v. shee hath no need to vse either, being to be maintained, as other Princes, by the labour of hir subiects : hir wings of the same size with a small Bee, and therefore in respect of hir long body, they seeme very short, resembling rather a cloake then a gowne ; for they reach but to the middle of hir traine or nether part : hir legges proportionable, and of the colour of hir belly, but her two hind-legges more yellow : hir nether part so long, and halfe so long as hir vpper part, more picked then a small Bees, hauing in it foure ioynts or partitions, and in each ioynt a golden barre, in stead of those three whitish rings which other Bees haue at their three partitions. The speere she hath is but little, and not halfe so long as the other Bees : which, like a Kings sword, is borne rather for shew and authority, then for any other vse. For it belongeth to hir subiects as well to fight for her, as to prouide for her. *Plinie* writeth thus doubtingly of it : *Non constat inter authores Rex nullumne solus habeat aculeum, maiestate tantum armatus, an dederit eum quidem natura, sed usum ejus illi tantum negaverit : illud constat imperatorem aculeo non uti.* But *Aristotle* doth truly approue the later opinion, as certaine : *Reges aculeos habent, sed non utuntur. Quocirca carere eos aculeis nonnulli existimant.* *Plinie* describeth them thus, *Omnibus forma semper egregia, & duplo quam ceteris major, penna breviores, crura recta, ingressus celsior, in fronte macula quodam diademate candicans : Multum etiam nitore à vulgo differunt.* If you desire to see this stately Prince, read cap. 5. n. 34. The breeding of her you may see c. 4. n. 18.

Besides their Soueraigne, the Bees haue also subordinate Gouvernours and Leaders, not vnfitly resembling Captaines and Coronels of Souldiours : For difference from the rest they beare for their crest a tuft or toffell, in some coloured yellow, in some murrey, in manner of a plume ; whereof some turne downeward like an Ostrich-feather, others stand vpright like a Hearn-top. And of both sorts some are greater

V. c. 6. n. 17.

Nat. hist. l. i. c.
cap. 17.Hist. an. l. 5. cap.
21.Nat. hist. l. i. c.
16.

10.

Bees haue also inferior
Gouvernours
Captains.

Captains

11.

which are known
by peculiar
markes.

C. 11
Captains or Leaders
seen only in May.

Pliny Nat. hist. li. 11.
c. 17.

Plin. Nat. hist.
li. 11. c. 5.

Vir. Geor. 4. v. 219.

13.

Two sorts of Bees.

x Hist. l. 5. c. 22.

6 Hist. l. 9. c. 40.

c Nat. hist. li. 11.
c. 18.

Of the Nature and properties of Bees,

and some lesse, as if there were degrees of those dignities among them. In all other respects they are like to the vulgar. These I thinke are they that *Plinie* meaneth, where he saith, *Circa regem satellites quidam, lictoresque assidue custodes auctoritatis*. In lesse then a quarter of an houre you may see three or foure of them come forth of a good stall; but chiefly in *Gemini*, before their continuall labour haue worne these ornaments. So that he might well say, *Rempublicam habent, consilia, ac duces*. All which hee that seriously considereth, must with admiration acknowledge that singular wisdom, order, and gouernment in them, which in no other creature, man onely excepted, (if yet to be excepted) is to be found: whence some haue inferred a farther matter,

His equidem signis atque hac exempla sequenti,

Esse apibus partem divina mentis, & haustus

Aethereos dixere. *Deum namque sic per omnis*
ita alia & fines mores

Aristotle maketh two sorts of Bees, the one (which is

best) short, diuers coloured, and round; the other long, like

unto waspes. *Optimum genus apum quae breues, variae, & in*

rotunditatem compactiles; secunda quae longa & vespis similes.

And in another place he putteth a difference betweene wilde

and tame: saying, *Differunt inter se apes parentibus nate ur-*

banis, & quae rustico montanoque victu educatis prodierint;

sunt enim haesylvestres horridiores aspectu, & iracundiores, &

minores; sed opere & labore praestantiores. Whom *Plinie* fol-

loweth almost verbatim: saying, *Apes sunt etiam rustica syl-*

vestresq; horrida aspectu, multo iracundiores; sed opere ac la-

bore praestantiores. Urbanarum duo genera: optima breues,

variae, & in rotunditatem compactiles; deteriores longa, &

quibus similitudo vesparum, etiamnum deterrima ex his pilosa.

But these differences my experience hath not found: neither

doe I see how they can be; seeing the swarmes of tame Bees

doe often flie into trees, and so become wilde; and the

swarmes of wilde Bees are not seldome found, and put into

hiues. Indeed the wilde are more angry then the tame: but

that is because they are lesse vsed to the company of men.

Moreouer, there is some difference in the bignesse of Bees:

For they that are loaded seeme greater and longer then those

that

Pliny - says lib xi c 17 about the King
there are certain Lictors & officers
constant protectors & supporters
of his authority.

likewise lib xi c v. they have a
republic or commonwealth
& Leaders, holding councils together.

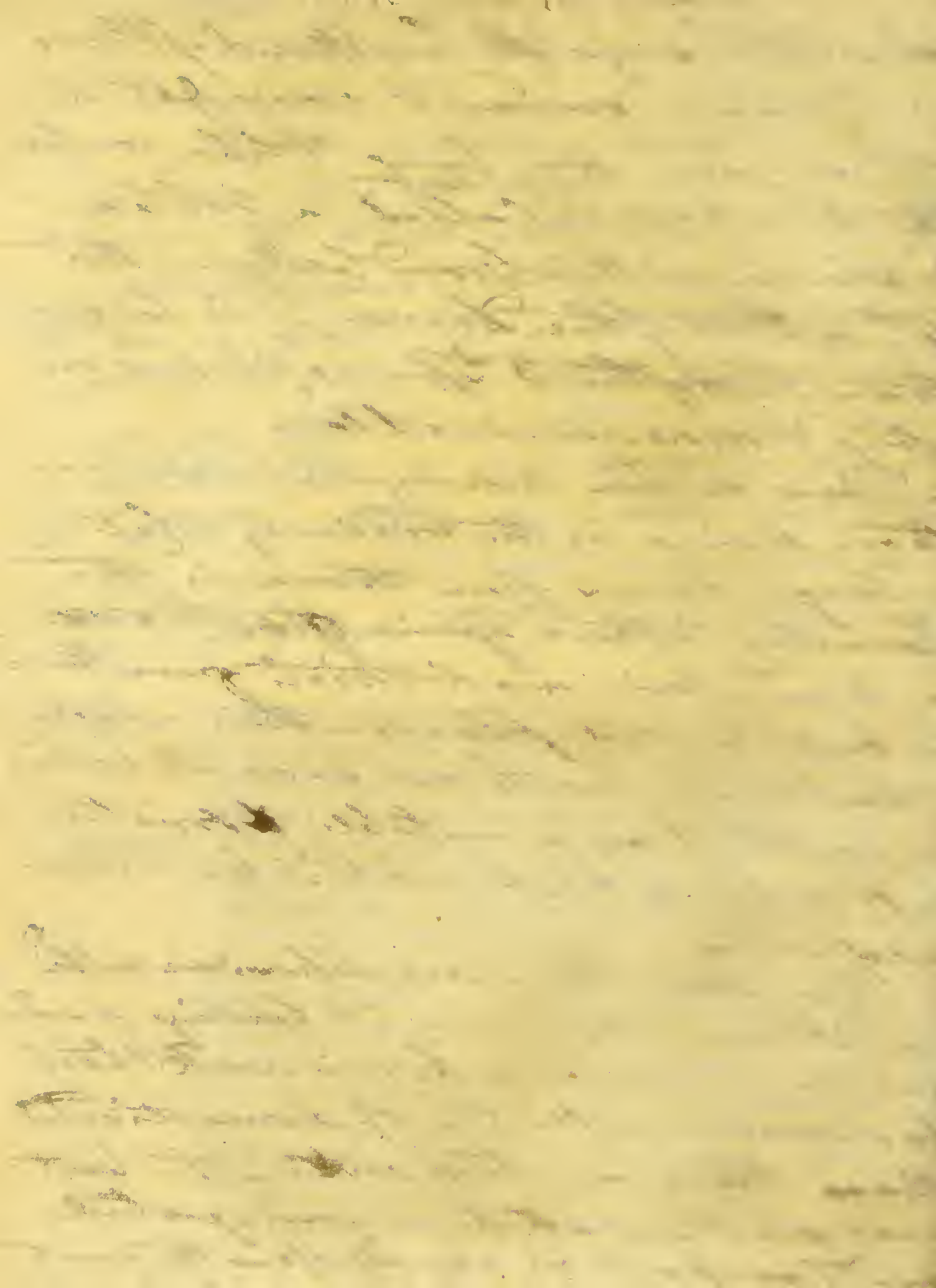
virgil. Georg: IV. v. 219.

Some from their appearance, following
up these examples, have said that there
is bees a portion of Divine Mind & Draught
ethereal: for that the Deity pervades, all
land - and the tract of the Sea and the lofty
Sky. - That hence flocks - herds - Men
all the race of Brutes or wild Beasts -
each at birth derive their slender lives
Accordingly that all of them afterwards
return hither, and dissolved, are brought
back: that nothing perishes: but that
alive they fly each into his order as
star, and succeed to the lofty sky -

Aristotle ^α says the best kind of Bees
are small round & variegated
the second are long & like wasps
the 3^d which is called a Robber
is black with a broad belly - the
4th - is that of the Drone, it is larger
than that of the 3^d species, it has no
sting & moreover is idle.

b. Bees differ ^{very} among themselves
those living in the vicinity of cities
or large towns from those in the
Country & there again ~~from those~~
in mountainous districts from those
in cultivated places - those which
inhabit the forests are more ill looking
in aspect & more invitable & smaller
but in work & labor & toil far more
excellent -

c. Pliny says there are likewise wild
wood Bees, which are ill looking and
far more invitable but in work & toil
far more excellent. Of domestic
Bees there are two sorts - the best
are short - spotted or variegated
and compact in roundness - the worst
are long and such as resemble wasps
are ~~the worst~~ worse & the hairy Bees are the
worst of all.



that are leere : also the Nymphs, *v.* when they come first abroad, are not growne to their full bignesse which afterward they haue, and the old ones doe wither, and become little againe. *v.* Likewise in these three ages their colours also do varie : for in their middle age they are browne, whereas before they are more pale, *v.* and at the last they turne whitish againe. *v.* But these are differences of Bees in the same stall, and not of one stall from an other, since these diuers sorts are in euery stall.

The seuerall parts of a Bee haue their seuerall vses.

Hir horns growing in the middle of hir forehead, with two ioynts, one close to the head, the other towards the middle, so that she can put them forth at full length when shee will, and draw them in againe close to hir head ; are the proper *organum* of the sense of feeling ; by which, with the least touch, the Bee sodainely senteth any tangible object : and therefore they serue to giue warning in the darke, and when shee is busie, of any obuius thing quicke or dead that might offend her.

Hir two cheekes being transparent, like Lanthorne, doe serue, though immoucable, in stead of Eyes : through which the species of things visible are conueied to the comon Sense.

For gathering hir prouision, shee hath two instruments, hir fangs and hir tongue : hir fangs in fashion of a paire of pincers hang not, as the iawes of other things, one ouer an other, but side-way one against the other, as is most conuenient for hir vses.

Hir tongue is of that length, that hir mouth cannot hold it : but being doubled between hir fangs vnder hir chinne, it reacheth to the necke. It is diuided into three parts : whereof the two outmost serue as a case to couer the third, which being the chiefe, the Bee in hir worke putteth forth beyond the other, and draweth in againe as shee will. And this third part is likewise parted into three, so that there are siue in all.

To set these instruments on worke, Nature hath furnished her with 4. wings, which swifter then the East-winde, carry her into all the foure coasts of the world, and thence with

V. 6. 4. u. 20.

V. n. 56.

V. c. 4. n. 17.

V. n. 56.

13.

The parts of a Bee.

14.

Hir hornes.

15.

Hir eyes.

16.

Hir fangs.

17.

Hir tongue, with the parts of it.

18.

Hir foure wings.

with hir precious lading beare her backe againe, vntill hir incessant labour hath worne them out. *v. n. 56.*

19.
Hir feete.

Hir rough and dew-clawed feet apt to take hold at the first touch are in number sixe, that shee may stand fast vpon foure, while she vseth the other two to wipe hir eyes; hir wings, hir tongue, or any other part, and to conuay the gathering of hirsfangs to hir thighs. *v. c. 6. n. 18.*

20.
Hir two weapons

21.
Hir fangs commonly vsed against insects.

For hir defence she is doubly weaponed. Hir fangs shee vseth when she is not much angry, against all *insecta*, as other Bees, Drones, Wasps, &c. therewith pinching and holding them commonly by the legs or wings, and sometime by the hornes: but this is rather a chiding, then a fighting, and a warning, rather then a punishment; though withall sometime she bend her speere against them, as if shee would kill and slay.

22.
Hir speere sometime.

V. n. 31.

V. c. 7. n. 36.

V. c. 7. n. 49.

*Nat. hist. li. 21.
c. 13.*

23.
Stinging present death to Bees.

Hir speere she is very loth to vse, if by any other meanes she can shift hir enemy, as knowing how dangerous it is to hir selfe: for if she chance therewith to strike any hard part, as the brest or shoulder, shee is enforced to leaue hir speere behinde her, and so she killeth and is killed *v.* with the same stroke. Yet when the Bees are very angry; as namely when they are assaulted with a multitude of robbers at once, *v.* or when in the spring a hungry stall forsaking his owne home presseth into their hiue, *v.* they fall sodainly vpon them with their poysoned speeres (*Apis natura cuspides dedit, & quidem venenatas*) but then they make short worke. For by that time they haue put vp their weapons, some die presently: others losing the vse of their wings tumble on the ground like mad things, vntill in a while they lose their liues too: others when they are wounded, runne away in great haste (as hauing their errand) either drawing on the ground one or moe of their legs, or doubling their nether part toward the ground, or turning the same awry to the one side or the other: but as many as are stricken, within an houre after will not bee able to wag out of the place, and within two or three at the most, they will be quite dead. I haue looked on, while thus they quickly cut off a whole stall, and among the rest, making then no difference, they spared not the

the Queene her selfe. After this manner doe they deale with the Drones at the time of the yeere, when they will not otherwise be beaten away. *v.c.4.n. 24.*

But their speares or stings they vse chiefly against things of other sort, as men, beaſts, and fowles: which haue outwardly ſome offeſiue excrement, as haire or feathers, the touch whereof prouoketh them to ſting: although ſuch ſtinging be alwaies mortall to themſelues (as anone is ſhewed. *v.*) For the ſkinne hauing receiued the ſting, holdeth it ſo faſt, that when they would be gone, they leaue both it and part of their entrals which are faſtned to it. *Aculeum apibus natura dedit ventri conſertum.* If they light vpon Poultry, although their deſire bee to the quicke, if they can quickly come at it; yet will they put forth their ſpeares as ſoone as they touch the feather: and if they chance to hit the hard part thereof, the ſting ſticketh faſt, as in the ſkinne; and therefore Goole-wings are naught to be vſed in the huiing of Bees.

Likewiſe, if they light vpon the haire of your head or beard, (ſaue onely when they come home loaden, or the weather is cold) they will ſting, if they can reach the ſkinne; although Wooll and Woollen doe not offend them: and if being otherwiſe angered, they ſtrike their ſpeares in Woollen, they can eaſily pull them out againe. But the nap of new Fuſtian diſpleaſeth them, becauſe it ſeemeth hairy; and the ſtuffe is ſo faſt, that it holdeth the ſting. Wherefore ſuch apparell is not fit among Bees: as alſo Leather in Gloues or otherwiſe, for aſſoone as they touch it they will ſtrike, if they be any whit mooued, and their ſpeares they cannot recouer againe. Veluet in facing of hats or elſe-where, doth anger them as much as any thing, making them ſtrike aſſoone as they touch it: but it hath not power to hold their ſpeare.

When they are angry, their aime is moſt commonly at the head, and chiefly about the eyes, as knowing that there they may do moſt harme, for that part ſwelleth moſt and longeſt: and yet I neuer heard that any euer ſtung the verie eye, as if they were forbidden to touch that tender part. But the bare

C

hand

24.

The ſpeares commonly vſed againſt other creatures.

25.

Haire and feathers cauſe the Bees to ſting.

V. n. 31.

Nat. hiſt. l. 11. c. 18.

26.

Wooll and woollen doe not offend them.

27.

Fuſtian, Leather, and Veluet naught among Bees.

28.

The Bees in their anger aime at the head.

Of the Nature and properties of Bees,

hand that is not very hairie, they will seldome or neuer sting, vnlesse they be much offended.

29.

When any is stung,
the company must
be gone.

When you are stung, or any in the company, yea though a Bee haue striken but your clothes, specially in hot weather, you were best be packing as fast as you can: for the other Bees smelling the raucke fauour of the poyson cast out with the sting, will come about you as thicke as haile: so that fitly and liuely did he expresse the multitude and fiercenesse of his enemies, that said, *They came about me like Bees.* Then is there no way to appease them but flight: the more you resist, the fiercer they are. They are like vnto incorrigible shrewes: there is no dealing with them but by patience: though when they sting they are sure to haue the worst. For the wound endangereth neither life nor limb: two nights sleep will take away the swelling, and two minutes the paine, (vnlesse it be in very rheumaticke or humorous bodies: of which sort I haue knowne some so swollen and disfigured with that little stroke, that you could scarce know them by their fauour in five or sixe daies after.) But on the other side,

30.

The Bees haue the
worst when they
sting.

whereas the Waspe, Horner, and Dorre, doe sting often without any hurt to themselves; the Bee neuer stingeth but once, and then she leaueth hir speere and entrals, more or lesse behinde her, *Animamq; in vulnere ponit.* (*Inter eunt qua percusserint, quoniam sine intestini eruptione aculeus eximi non potest.*) For within foure and twentie houres after, or, if much of hir entrals come forth with the sting, within halfe that time, she dieth. But the speere retaining life when the Bee is gone, if it be not presently pulled out, will worke it selfe into the flesh vp to the hard end, and so cause the paine and swelling to be both greater and longer. Therefore when you are stung, instantly wipe off the Bee, sting and all, and wash the place with your spittle: so shall you preuent both paine and swelling, which otherwise nothing but time can cure: for the poyson is so subtil, that it quickly pierceth the flesh, and the wound so little, that no Antidote can follow after: and yet I haue heard commended for a remedie, the iuyce of

31.

They lose their
sting and entrals,
and consequently
their liues.

Virg. Georg.

Hist. an. l. 9.

c. 40.

32.

The speere of it
selfe pierceth dee-
per when the Bee
is gone.

33.

How to preuent
the paine and
swelling.

34.

Nothing but time
can cure their
stinging.

Houselecke, of Rue, of Mallowes, of Iuie, of a Marigold
leafe,

Animasq;
in vulnere
ponit

leafe, of Holyhock and Vineger, of Salt and Vineger, and diuers other things. *Id malua peculiare est, ut imposita ictibus vesparum & apum dolores leuet.* Fern. Meth. l. 6. cap. 4. *Stercus vaccinum vesparum ictus sanat, & inditis aceto tumores digerit.* Fern. Meth. l. 5. cap. 27. Rue drunken with Wine, or rather with Hydromel, or the leaues stamped with Honie and Salt, and laid to the wound, is good against stinging of Bees, Waspes, Hornets, and Scorpions; Dodoens, l. 2. c. 83.

Verum hoc mihi præ cateris probatur remedium. Vt primum se quis ictum senserit, aculeum adhuc epidermidei inhaerentem cum ipsa ape instanter abstergat (nam si paulisper sinatur, dum veram cutem penetraverit; vehementior inde, diuturnior, & sanatu difficilior evadet tum dolor tum tumor) dein, quam mox reddi potest, propria vulnus urinâ malva folia sæpiuscule proluant, dum subsequens hoc comparetur emplastrum. R Cardui Benedicti virentis contriti M.I. Ovi albumen quasi in oleum coagitatum: misce, fiat emplastrum, quod lini retrementis impositum, vulneri linteo alligetur: ubi aruerit, recens repone: sed vulnus nequaquam fricetur.

But if thou wilt haue the fauour of thy Bees that they sting thee not, thou must auoid such things as offend them: thou must not be (1) vnchaste or (2) vncleanly: for impuritie and flutishnesse (themselues being most chaste and neat,) they viterly abhorre: thou must not come among them (3) smelling of sweat, or hauing a stinking breath, caused either through eating of Leekes, Onions, Garlecke, and the like; or by any other meanes: the noisomnesse whereof is corrected with a cup of Beere: and therefore it is not good to come among them before you haue drunke: thou must not be giuen to (4) surfeiting and drunkennesse: thou must not come (5) puffing and blowing vnto them, neither hastily stirre among them, nor *violently defend thy selfe when they seeme to threaten thee; but softly mouing thy hand before thy face, gently put them by: and lastly,

ceiuing it by the strong smell of the humour (for she smelleth then as if she had stung, v. n. 29.) will be so eager vpon reuenge, that by no meanes can they be pacified, vntill they haue the field.

M.I.

*Manipulus unus.
* one Hand full.*

35.

*What things the
Bee-master must
auoid.*

* Which not onely increaseth their anger, (specially in hot weather, v. n. 38.) but incireth others to take their parts: and if by striuing and striking you chance to kill one, the Bees presently per-

36.
*The six proper-
ties of a Bee-ma-
ster.*

37.
*Safer to walke,
then to stand a-
mong Bees.*

38.
*The fittest time to
stirre about Bees.*

39.
*In the heat of the
day they are most
angry.*

40.
*How to be armed
when the Bees
are angry.*

thou must be (6) no Stranger vnto them. In a word, thou must be chaste, cleanly, sweet, sober, quiet, and familiar: so will they loue thee, and know thee from all other.

At any time, when nothing hath angred them, one may boldly walke along by them: but if hee stand still before them within the space of a pearch in the heat of the day, it is maruell but one or other spying him from the Hiue, will haue a cast at him.

If you haue any thing to doe about your hiues, the fittest time is in the morning, when the Bees are new gone abroad; and in the euening before they be come in: for then the weather being coole, and the company few at home, they are not so apt to be quarrelling, vnlesse they be much prouoked. Likewise at other times of the day, when the weather is cold, wet, or windie, they are patient enough.

But about noone in hot weather, and specially when they haue tasted of the Hony-dewes, they are soone angry, and very eager.

But whensoever you haue occasion to trouble their patience, or to come among them being troubled, it is better to stand vpon your guard, then to trust to their gentleness. For the safeguard of your face (which they haue most mind vnto) prouide a purf-hood made of course boultering, to be drawn and knit about your collar: which, for more safetie, is to bee lined against the eminent parts with Woollen-cloth. First, cut a peece about an inch and a halfe broad, and halfe a yard long, to reach round by the temples and fore-head from one eare to the other: which being sowed in his place, ioyne vnto it two short peeces of the same bredth vnder the eyes, for the balls of the cheekes: and then set another peece about the bredth of a shilling against the top of the nose. In stead of this, you may vse a Cypres Band or a Boulter, hauing a Handkerchiefe betweene your fore-head and it, to beare it out from the skinne, and your hat on your head to hold it fast. And if they be so earnest that you feare stinging your hands, put on a paire of woollen cuffes or gloues. When you haue on this Helmet and Gantlets, as a man armed at all points, you may boldly deale with them, being out of
the

the danger of their poysoned speares. At other times when they are not angried, a little peece halfe a quarter broad to couer the eyes and parts about them, may serue: for then, though it be in the heat of the day, vnlesse they may strike about the eyes, they care not to strike at all.

Vnto Cattel which haue not the reason by sight or otherwise to saue themselues, they are more dangerous. A Horse in the heat of the day looking ouer a hedge, on the other side whereof was a stall of Bees, while hee stood nodding with his head, as his manner is, because of the Flies, the Bees fell vpon him and killed him. Likewise, I heard of a Teeme that stretching against a hedge, ouerthrew a stall on the other side, and so two of the Horses were stung to death. I doubt not but through negligence many such mischances haue happened else-where. For this thing hath beene long since obserued by that great Philosopher. *Necant (saith he) vel maxima animalia ictu sui aculei: jam equus occisus ab apibus est.*

41
Bees dangerous to Cattell.

Arist. hist. an l.
9.c.40.

ANd such are the sorts of Bees, with their integrall parts. Among which, though there do not appear those outward *Organa* of senting which other *Animals* haue, nor is seene in the head that inward principall * part, which is the fountaine and seat of all Sentes, Phantasie, and Memorie; yet haue they the Senses them selues, both outward and inward: which their subtrill and actiue spirits doe excite and quicken, for the works of their curious Art and singular Vertues. *Quamvis non sint membra qua, velut carina, sensus inuehant; esse tamen his arditum, olfactum, gustatum, eximia praeterea natura dona, solertiam, animum, artem quis facile crediderit. Creat Deus minima corpore acuta sensu animantia: ut majori attentione stupeamus agilitatem musca volantis, quam magnitudinem iumentu gradientis.*

42
The Bees senses.

* *Cerebrum commune sentiendi principium.* For.
Phil. 5.c.14.

Nat. hist. l. 11. c.
4.

Augustin, de
Genesi ad literam. lib. 3.

Of all the five Senses their sight seemeth to be weakest: & weaker when they come home loaded, then when they are leere: and being loaded weaker on foot, then when they are flying. If, when they come home loaded, they light beside the doore, they will goe vp and downe seeking for it, as if they were in the darke: and vnlesse by chance they hit vpon

43.
Their sight dim.

it, they must flye againe before they can finde it. As many as fall beside the stoole when it waxeth darke, ten to one they lye abroad all night: yea, if at such time being troubled by any thing they come forth from the stoole, though then they be fresh and lustie, they will leape vp and downe, runne and flieto and fro, till they be wearie; but by no meanes can they finde the way in againe. And therefore it is that when they flie abroad, they take such paines at the doore in rubbing and wiping their glazen eies, that they may the better discerne their way forth and backe.

44.
Their smelling
very quicke.

V. c. 6. n. 41.

Lucret. l. 4. 7.
See Busby v. 810 - 5

V. c. 4. n. 30.

45.
Hearing and see-
ling.
Hist. an. l. 9.
cap. 40.

46.
Tasting.

But their smelling is excellent, whereby when they flie aloft in the aire, they will quickly perceiue any thing vnder them that they like, as Honie, Rozin, or Tarre, though it be couered. As soone as the Honie-dew is fallen, they presently winde it, though the Oakes that receiue it v. be a farre off: which the Poet, speaking of the excellencie of some creatures in this sense before others, doth thus expresse,

— Ideoq, per auras

Mellis apes, quamvis longè, auncuntur odore.

And by this sense they finde out any strange Bee, which is not otherwise to be knowne from their owne company, and that in the darke Hiue: where, when they are disposed, they will by the same meanes cull out the Drones, yea and pull out the Cephens v. that are shut vp in the cells, not medling with any of their owne Sex.

Their hearing and feeling are verie quicke. If you touch their Hiue but lightly, or the stoole, or the ground neere it; they presently perceiuing it, make a generall noise: although Aristotle doubt whether they heare, or not. *Quantum incertum est an audiant.* But if they did not heare, to what purpose is that musicke made in the Hiues, before the swarming? v. c. 5. n. 28. and in the battaile, *vid: c. 7. n. 34.* or his tinging of swarmes to make them come downe, v. inc. 5. n. 37.

And of their fift sense I make no question, sithens they are vsed to things of so different tastes: although there may seeme the lesse vse of it, because their smelling is so perfect.

And

And such are their outward senses. The inward qualities of their minds are farre more excellent. Their curious art and workmanship to be admired rather then imitated of men, See cap. 6.

Their singular vertues are no lesse admirable.

In valour and magnanimitie they surpasse all creatures: there is nothing so huge and mightie that they feare to set vpon, and when they haue once begunne, they are inuincible: for nothing can make them yeeld but death: so great hearts doe they carrie in so little bodies v. In priuate wrongs and iniuries doneto their persons (for which cause men will soonest quarrell) they are very patient: but in defence of their Prince and Common-wealth they doe most readily enter the field,

— Et corpora bello

Obj. Et int. pulchramq. petunt per vulnera mortem. v.

Whereby appeareth their singular fortitude, no lesse then their prudence doth in the gouernment of their Common-weale v. beside which, their wisdom and knowledge in other matters is verie much: as of their enemies, of their fellowes and friends, of the Drones, when they haue too many, and when they neede them not at all, also of the times and seasons of the yeare. Their wit and dexteritie, as well in gathering as in working their sweetes, is inimitable. v. Moreouer, as skilful Astronomers, they haue fore-knowledge of the weather. *Prediximant enim ventos imbresq., & tunc se pleraq. continent tellus. Item, Presagiunt apes & hyemem & imbres. v.* And in stormy and windie weather, it is a wonder to see what cunning those that are abroad doe vse to shift the wind when they come home laden: how they flie alow by the ground, among the bushes, in the lanes, and lee-sides of the hedges. *Iuxta terram volant in aduerso flatu depribus hebetato.* But aboue all, one excellent skill they haue, which the most excellent femals, though much they desire it, must yeeld themselves to want: for they know certainly when they breed a male, and when a female: which thing appeareth by this, that they lay their Cephens-seeds in a wide combe by themselves, v. and the Nymph-seedes in the rest, which are of a smaller size, v. So
that

47.
Their vertues.

48.
Fortitude:

V. c. 7. n. 37.

Virg.
V. n. 5.

49.
Prudence and knowledge.

V. c. 1. n. 4. 5. 6.
& 7.

V. c. 6.
Nat. hist. l. 11.
c. 10.
Hist. an. l. 9.
c. 40.
V. c. 7. n. 61.

Nat. hist. l. 11.
c. 10.

V. c. 6. n. 10. &
c. 4. n. 19.
V. c. 6. n. 19.

Ambr. Hex. l. 5.
c. 21.

that what wanteth in the sight of their eies, is fully suppli-
ed in the sight of their minde. *Cum sit infirma robore apis,*
valida est vigore sapientie & amore virtutis.

And yet I haue read of a greater knowledge then all this :
How there were Bees so wise and skilfull, as not onely to de-
scribe a certaine little God a mightie, though he came among
them in likenesse of a Wafer-cake ; but also to build him an
artificiall Chappell. If I should relate the Storie, all men, I
know, would not beleue it : notwithstanding, because eu-
ery man may make some vse of it, you shall haue it.

50.
A strange tale
concerning the
knowledge and
devotion of Bees.

Bounce

A certaine simple woman hauing some stals of Bees which
yelded not vnto her hir desired profit, but did consume
and die of the murraine ; made hir mone to an other Wo-
man more simple then hir selfe : who gaue her counsell to
get a consecrated Host, and put it among them. According
to whose aduice she went to the Priest to receiue the Host :
which when she had done, she kept it in her mouth, and be-
ing come home againe she tooke it out, and put it into one
of hir Hiues. Whereupon the murraine ceased, and the
Honie abounded. The Woman therefore listig vp the
Hiue at the due time to take out the Honie, saw there (most
strange to be scene) a Chappell built by the Bees, with an
altar in it, the wals adorned by maruellous skill of Archite-
cture, with windowes conueniently set in their places : also
a doore and a steeple with bells. And the Host being laid
vpon the altar, the Bees making a sweet noise, flew round
about it.

But whether this doe more argueth the supernaturall know-
ledge and skill of the Bees, or the miraculous power of the
Host, or the spirituall craftinesse of him, whose comming is
by the working of Satan with all power and signes and ly-
ing wonders, some scrupulous * Skeptrick may make a ques-
tion : and presuming to examine euery particular circum-
stance ouer narrowly, will make obiections against the truth
of the Storie : which, by their leaues, in the behalfe of my
Authour, I must not spare to answer. First, it may be they
will obiekt that the Host being held so long in the Womans
mouth, could not choose in that space but melt and marre.

Indeed,

* A Gellius, l.
11. c. 5.

Indeed, if it did remaine, as it was, a Wafer-cake, this were likely enough: but being turned into fleshi, the case is altered. If they shall say that because it was now Honie-haruest, at which time good stals, such as this was, are full of Wax and Honie, that therefore there could not be roome enough for a Chappell with a steeple and bells in it; I answer, that this is as weake and simple as the former. For seeing it is knowne that a Blacke-smith of *London* did make a Locke and a Key so little that a flye could draw it; why should not the little Smith of *Nottingham*, which doth the worke that no man can, frame a little Chappell in a little roome? But then perhaps they will reply, if wee grant you this, yet how could the Bees flie about the altar in that little Chappell, seeing they are scarce able to flie in so narrow a close roome as the emptie hiue? As for that, it may be a mistaking of a word: haply the woman said they did but crawle. If they shall aske how the woman could see the altar with the Host standing in the Chancell, and the Bells hanging in the steeple, seeing the waxen walls were not transparent; they may easily thinke that the Bees would giue their dame leaue to looke in at the windowes. And if they shall say that those bells being made of such metall would giue but a weake sound, when they were rung to Mattins; they must consider the Parishioners dwelt not farre off. And so I thinke these captious Criticks will hold themselves satisfied.

Vnto this Storie my Author immediatly addeth an other, like vnto it, and as likely: how certaine Theeues having stollen the Siluer Box wherein the Wafer-Gods vse to lye, and finding one of them there, being loth, belike, that hee should lye abroad all night, did not cast him away, but laid him vnder a Hiue: whom the Bees acknowledging, aduanced to an high roome in the Hiue, and there in stead of his siluer boxe, made him another of the whitest Wax: and when they had so done, in worship of him, at set houres they sung most sweetly beyond all measure about it: yea the owner tooke them at it at midnight, with a light and all. Wherewith the Bishop being made acquainted, came thither with many others: and lifting vp the Hiue, hee saw there

neere the top a most fine boxe, wherein the Host was laid, and the Quires of Bees singing about it, and keeping watch in the night, as Monkes doe in their Cloisters. The Bishop therefore taking the Host, carried it with the greatest honour into the Church : whither many resorting, were cured of innumerable diseases.

I doubt not, but some incredulous people will quarrell this Storie as well as the former : making question, since the combs in the top of the Hiue, are not past halfe an inch one from an other, how there could be roome for a boxe of that bredth that would containe the Host; and then being there, how it might be seene by the Bishop, seeing those spaces are alwaies filled with Bees, and the Storie saith, that they were then singing about it : and therefore perhaps they will suspect the whole Narration, supposing it rather to be an vnadvised deuice of some idle Monke, which, if he had consulted with them that haue skill among Bees, might haue made his tale more probable. Alledging moreover ; that therefore there is no mention made of any particular person, time, or place, lest the circumstances should disproue the matter it selfe. All which obiections I could as easily answer as the former, if I thought it needfull ; But now because some may be as ready to mistrust my relation, as others are to object against the truth of the Stories; I will here in mine owne behalfe for their satisfaction, set them downe in my Authors owne words.

Cum mulier quaedam simplicis ingenij nonnulla apum alvearia possideret, neq; illa redderent expetitum fructum, sed lues quadam tabescentes morerentur ; de consilio alterius famina simplicioris, accessit ad sacerdotem perceptura Eucharistiam : quam sumptam tamen ore continuit, domumq; reversa extratam collocavit in uno ex alvearijs. Lues cessavit, mella affuebant. Itaq; suo tempore mulier, apertis, ut mel educeret, alvearijs, vidit (miranda res) exedificatum ab apibus sacellum, constructum altare, parietes miro Architecturae artificio suis fenestris appositè suis locis ornatos, ostium, turrin, cum suis tintinabulis: Eucharistiam vero in altari repositam circumvolabant suavi susurro perstrepenes apes.

Nam miranda
canunt, sed
non credenda
Postea.

The other he reporteth thus. *Quidam fures, ut argenteum vasculum in quo condita erat Eucharistia auferrent, & illam secum rapuerunt: sacratissimum vero C. corpus sub alveari projecerunt. Post aliquot dies Dominus alvearis videt apes certis horis sepius, dimissis operis ad cibos conuehendo, totos esse in quodam mellisluo concentu edendo. Cumq; fortè de media nocte exsurrexisset, conspiratur supra alveare illustrissimam lucem, suavisimeq; præter omnem modum modulantes apes. Rei novitate inusitata, & prorsus admirandâ perculsus, Deiq; monitu intimo agitatus rem desert ad Episcopum. Is plurimis secum assumptis eo se conferens, aperto alveari videt Vasculum elegantissimum effectum è candidissima cera prope alvearis fastigium, in quo reposita erat Eucharistia, circa illud choros apum circumsonantes, & excubias agentes. Acceptum igitur Episcopus sacramentum maximo cum honore in templum reportavit: quo multi accedentes ab innumeris sunt morbis curati. Theobozius de signis Ecclesiæ. Lib. 14. c. 3.*

In which Storie wee may note, besides the wonderfull knowledge and deuotion of the Bees, an incredible power and vertue also. For this God which they kept and compassed, is said to haue the gift of healing, which others, though of as good a making, we know doe want. The conclusion, which my Author necessarily inferreth hereupon, is better then all the rest. *Ex his necesse est dicamus in Eucharistia verum C. corpus esse.* But if thou wilt grant me that hereby is proued the incredible knowledge and skill of the Bees, for my part I will vrge thee no farther.

In the pleasures of their life, the Bees are so moderate, that perfect temperance seemeth to rest onely in them.

Also, in their owne Common-wealth, they are most iust, not the least wrong or iniurie is offered among them. But indeed I cannot much commend their Iustice towards strangers: for all that they can catch is their owne: vnlesse they may be excused in this respect, that the Bees of diuers hives are at deadly feud, or rather as Kingdomes, that are at defiance one with an other. *v. c. 7. n. 25.*

Their Chastitie is to be admired. *Integritas corporis virginalis omnibus communis.*

51.
Temperance.

52.
Iustice.

53.
Chastitie.
Amb. Hex. l. 5.
c. 21.

August. de Tri-
nit. l. 3.

Idem de bono
coniugali.

Georg.

7. 6. 4. 7. 3. &c.

Generat. an. l.
3. c. 10.

34.

Cleanlinesse.

Hist. an. l. 9. cap.

40.

Nat. hist. li. II.

c. 10.

Hist. an. l. 9. c. 40

Var. l. 3. c. 15.

35.

The age of Bees.

Georg. 4.

Hist. l. 5. c. 22.

7. 6. 6. 20.

Georg. 4.

Et certe apes semina non coeundo concipiunt. Item, Omnipotens creator apibus prolem sine concubitu dedit.

Illum adeo placuisse apibus mirabere morem,

Quod non concubitu indulgent, &c. They ingender not as other liuing creatures: onely they suffer their Drones v. among them for a season, by whose Masculine virtue they strangely conceiue and breed for the preseruatiō of their sweet kinde. Which strange kinde of breeding the Philosopher saith to be apparent vnto sense and reason. *Cum in genere piscium talis quadam sit generatio nonnullorum, ut sine coitu generent; hoc idem in apibus etiam evenire videtur, quoad sensus ratioq; apparens admoneat.*

For cleanlinesse and neatnesse, they may be a Mirror to the finest Dames. *Mandissimum omnium hoc animal est.* For neither will they suffer any fluterie within, if they may goe abroad, *Amoliuntur omnia è medio, nullaq; inter opera spurcitia jacent;* neither can they endure any vnfauorinelle without nigh vnto them. *Odere fædos odores: Nulla harum assidet in loco inquinato, aut eo qui male oleat.* And for their persons (which are louely browne) though they be not long about it, yet are they curious in trimming and smoothing them from top to toe, like vnto sober Matrones, which loue as well to goe neat as plaine: pied and garish colours belong to the Waspe, which is good for nothing but to spend and waste.

Anent the age of Bees there are diuers opinions: some thinke that they may liue foure or fve yeares, yea some six or seuen: *Neq; enim plus septima ducitur ætas.*

Aristotle speaketh of a longer time. *Vit a apum anni sex, nonnulla etiam 7. possunt complere: quod si examen 9. aut decē annos duraverit, prosperè actū esse existimatur.* Which opinions are grounded vpon this, that they see a stall sometimes continue so long, before the Bees die altogether. But this continuance is onely by succession: and so might they liue in secula, if the rottennesse of their combs, the hardnesse of their Honie, & the abundance of noisome stopping v: would suffer them to abide the Hiues. *Nam genus immortale manet.*

* This noisome Stopping is Bees Vreac, often But
so called. The farina offlowers. which if
it is mixed with the young Bees, becomes

But the truth is, a Bee is but * a yeares Bird, with some advantage.

* Which is a long life in comparifon of the Silk-wormes, which liue but foure moneths; or of the Wasps, which liue but fūe: or of the Drones, which but fix.

For the Bees of the former yeare, which vntill *Gemini* in the next yeare doe looke so youthfully, that you cannot discern them from their full growne Nymphes, which that spring they haue bred; doe from thenceforth change with manifest difference: for the young Bees continue great, full, smooth, browne, well-winged; the old waxe little, withered, rough, whitish, ragged-winged: and withall so feeble, that when they come loaded home, if any thing stand in their way, yea many times, though there be nothing, they fall downe, and being loaded cannot rise againe: and then either a little cold or wet in the day, or the nights dew killeth them: you may daily finde, specially in *Cancer* and *Leo*, some dead, some halfe-dead before the Hiues, and some aliue and lustie, which yet can neuer rise againe. Some of them will hold out so long, till their wings are more then halfe worne: but by *Libra* you shall scarce see one of them least.

The young Bees, as best able, beare the greatest burdens: for they not onely worke abroad, but also watch and ward at home both early and late: when need is, they hazzard their liues in defence of the rest, they beat away the Drones, and fight with other Bees and Wasps, and assault with their speeres whatsoeuer else offendeth them, they carrie their dead forth to be buried, and performe all other offices. But the labour of the old ones is onely in gathering, which they will neuer giue ouer, while their wings can beare them: and then when they cease to worke, they will cease also to eat: such enemies are they to idlenesse. And therefore generally they die in their delightfull labour, either in the field or comming home: *Atque animas sub fasce dedere.* Sometimes as well in Summer as Winter v. the Bees take pleasure to play abroad before the Hiue, specially those that are in good plight, flying in and out, and about, so thicke,

56.
The difference
betweene the
young Bees and
old.

May

*True
July*

Sept

57.
The office of the
young Bees.

58.
And of the old.

Virg.
V. c. 3. n. 59. &
62.

59.
Bees wont est-
soones to play.

Nat. hist. l. 11.
c. 20.

and so earnestly, as if they were swarming or fighting: when indeed it is onely to solace themselves: and this chiefly in warme weather, after they haue beene long kept in. *Excitationem interdum solennem habent: spatiataq; in aperto & in altum data, gyris volatue ditis, tum demum redeunt.*

60.
They are soone
killed with cold.

The Bee is by nature very tender, soone chilled and killed with cold, which the Dorre, the Waspe, yea the Moth, the Gnat, and other little flies can endure, and most of all chen, when by reason of long restraint, their bellies are ouer full. The first that faileth in them, when the cold beginneth to preuaile, is their wings: so that they cannot rise to their Hues to helpe themselves by the heat of their fellows. How to recouer them, yea when they are quite dead, See Cap. 7. n. 63.

61.
How to reuivie
them.

62.
The Bees excel-
legrier.

The Bee therefore excelling in many qualities, it is fitly said in the Prouerbe,

As	Profitable	} as a Bee.
	Laborious	
	Loiall	
	Swift	
	Nimble	
	Quicke of sent	
	Bold	
	Cunning	
	Chaste	
Neat		
Browne		
Chillie		

63.
Bees a chiefe ex-
emplar of the di-
uine power and
wisdom.

Du Bartas.
Fift day.

These wonderfull parts and properties of this little creature, what are they but so many euident proofes of the infinite power and wisdom of the Creator?

*For, if old times admire Calicrates
For Iuorie Emmets; and Mermecides
For framing of a rigged ship so small,
That with hir wings a Bee can hide it all;
Admire we then th' All-Wise Omnipotence,
Which doth within so narrow space dispen-
ce*

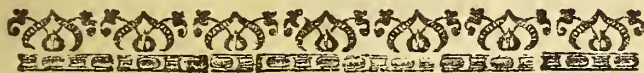
that of y. male & the queene bee, he hath sayd nothing at all nor of the time nor maner of her breeding, nor whether she produce buth Royall small Bees, or Royall Drones, or ordinary Drones, or Nymphes, or ather some.

and of their Queene.

C. 2.

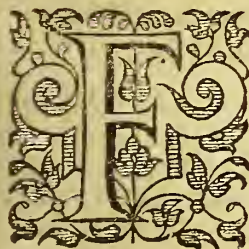
So stiffe a sting, so stout and valiant hart,
So loud a voyce, so prudent Wit and Art.
Their well rul'd State my soule so much admires,
That, durst I loose the raines of my desires,
I gladly could digresse from my designe,
To sing a while their sacred discipline.

likewile there is very little sayd of those Bees w^{ch} tufts w^{ch} it calls Dukes: of their Sex; or Breeding, or office, or number in euery stocke & swarme



CHAP. II.

Of the Bee-Garden, and Seats for the Hiues.



Or your Bee-garden, first choose some plot nigh your home, that the Bees may be in sight and hearing; because of swarming, fighting, or other sudaine hap, wherein they may neede your present helpe. While the stalls are few, your Garden of Hearbs and Flowers will serue. *Hortis coronamen-*

tisq; maxime alvearia & apes conueniunt, res precipui gustus compendijs, cum saviu. But when they are growne to a sufficient number, they require a square greene plot fitted for the purpose. *v. n. 8.*

2. See it bee safe, and surely fenced, not onely from all Cattell, (which if they breake in, may quickly spoile both the Bees and themselves) and specially from Swine (which by rubbing against the Hiues, and tearing the hackles in a wantonnesse, are most apt to ouerthrow the stalls;) but also from the violence of the winds: that when the Bees come laden and wearie home, they may settle quietly. *v. n. 5.*

The North fence of your Garden should bee close and high, that the cold wind of that coast, (which blowing against the Bees comming home wearie, would throw downe and

1.

Of five things requisite in a Bee-garden, the first is that it be nigh at hand.

Nat. hist. li. 21.

c. 12.

2.

That it be safely fenced from cattell and winds.

3.

The North and East fences should be high.

and kill many) may bee altogether kept from them. And therefore, if it may be, set your Bees on the South side of your house.

The East-fence also would bee good and high to keepe from the Bees as well the sunne, as the winde. For the sunne rising doth oftimes till them forth, when the ayre is colder then they can endure; and the East-wind being cold & sharpe is very vnkinde for Bees, specially in the Spring.

But in no wise let the place be shadowed from the South-sunne: for that doth not onely dry the Hives and relieue the Bees in the Winter and Spring, but also causeth them to swarme in Summer, if it be not extreme hot and drie.

Nor yet from the Sunne-setting: because in calme and pleasant weather the Bees will be in the field after the Sunne is downe, euen as long as they can there see: and if when they returne, they finde it darke at home, many of them, their sight being but dim, fall short or wide: which flying and running to and fro till they be wearie, at length yeeld to the cold dew.

Otherwise let the fences be as good against the South and West-winds also, as may be: for although they be not so cold and bitter as the other; yet are they no lesse violent, and more frequent: so that they also doe much harme, specially in the Spring. And therefore if at that time of the year, in rough and boistrous winds, you finde that the Garden-fences doe not sufficiently guard and defend them; then is it good to set vp wixed or lined hurdles, or some other skreene betweene them and the weather. For though they can shift abroad in the strongest winds, as a ship that hath sea-roome; yet are they easily ouerthrowne at the Hiue, as a shippe is soone wrecked at the Hauen.

A house or wall is fittest for the North fence: and a Quick-set-hedge for any of the other three: it may serue also for the first, specially if it be thicke.

3. That the place be sweet, not annoyed with any stinking sauour. I haue knowne a stall in the Spring, being sufficiently prouided of Honie, and hauing bred young, to forsake all, because of Poultry that roosted in a tree ouer them.

Odere

4.
*The South and
West fence must
be also good, but
not so high as to
leide the Sunne
from the Hives.*

V. c. 5. n. 19.

V. c. 1. n. 43.

5.
*In rough winds
the Bees need a
skreene.*

6.
*3. That it be
sweet.*

and Seats for the Hives.

C.2.

Odore fædos odores, proculq; fugiunt: And yet the smell of urine doth not offend them: nay, they will bee very busie where it is shed. It is thought they vse it for Physicke. *Remedium contra alvi concitationem est urina hominum vel boum.*

Nat. hist. li. 11.
c. 18.
Nat. hist. li. 21.
c. 12.

4 That it be neither verie cold in Winter, nor very hot in Summer. *Locus astate non fervidus, hyeme tepidus, v.* A bare flower is naught in both seasons: because in Winter it is ouer cold, and by that meanes quickly chilleth the Bees that light vpon it; and in Summer it causeth them to lie forth through excessiue heat. *v.* A grassie ground therefore is best at all times: but let it be kept notte in Summer, and not wet in Winter: for long grasse and weeds about the Hiue, doe but harbour the Bees enemies, *v.* and hinder both their passage in and out, and their rising againe when they fall short: and water if it stand, as it will bee offensive to your selfe, so is it dangerous to your Bees for chilling and drowning them. And as the parts about the hives are to be kept notte & bare; so are other places also, where the swarmes doe vse to play and pitch, whether within or without the Garden, to bee freed likewise from long grasse and weedes, much more from Beanes, Pease, Hempe, and such high things: for the young weake Nymphs falling in those shadie places, except the weather be warme and drie, are in danger to be chilled before they can rise againe. For which cause, the swarmes doe vsually refuse to stay and settle about such places: and then if windie or cloudie weather suffer them not to goe further, they must either goe home, or light vpon some other Hives: where, without your present skill and diligence, they are like to be all lost.

5 That it be conueniently beset with trees and bushes fit to receiue the swarmes, as Plum-trees, Cherry trees, Apple-trees, Filberds, Hazels, Thornes, &c. Which they will the more delight to light vpon, if, conuenient boughes hanging out alone from the bodies, the twigs below standing in their way be pruned, and the weeds and grasse vnderneath be cut away close to the ground. Although, if they be willing to stay, they will not refuse a dead hedge, a Lauender Border, or the like, or sometime the bare ground. For want of trees,

E

some

7.
Neither very cold in Winter, nor ouer hot in Summer.
Hist. l. 9 c. 40.
V. 17 in c. 3. n. 36.
V. c. 5. n. 19.
8.
A grassie ground is best, but kept notte and drie.
V. c. 7. n. 3.

9.
5. Beset with trees and bushes.

some haue stucke vp greene boughes, and the Bees haue lighted vpon them.

10.
*Two sorts of
seats.*

THe place being thus fitted, the seats are to be provided: which, whether they be stooles or benches, must be set a little sheluing, that the raine may neither runne into the hiue, nor stay at the doore.

11.
*The benches not
so good as single
stooles.*

To set many stals vpon a bench (as many vse to doe) is not good: for that in Summer it may cause the Bees to fight; as hauing easie accessse on foot to each other, and standing so neere, that they shall sometime mistake the next Hiue for their owne: and in Winter the bench will bee alwaies wet, which looseth the cloome, rotteth the bottome of the Hiue, and offendeth the Bees: and the Mousse v. at all times hath free passage from one to another, without feare.

V.6.7.8.2.

12.
*Swarmes may be
set on benches.*

The single stooles therefore are best. And yet it is not amisse to set most of your swarmes vpon benches, about the old stals: from whence remoue them to the stooles, when the stals are taken: and then set vp the benches till another year. Yet I preferre single stooles set two foot apart, though they bee laid flat on the ground: but it is better to reare them with foure legges, though little and short. If they betwelue or thirteene inches, three or foure inches may bee forced into the ground for their surer standing.

13.
*Woodden stooles
better then they
of stone.*

The best stooles are of wood: those of stone are too hot in hot weather, and (which is worse) too cold in cold.

14.
*The size of
stooles.*

For their size, they should not be aboue halfe an inch or an inch without the Hiue: saue onely before, where there needeth the space of three or foure inches, that the Bees may haue room enough to light vpon: specially then, when the sight of a rainy cloud sendeth them thronging home. Which fore-part from one side to the other, is to be cut sheluing that it may the better auoid the raine. And therefore if the Hiue besitteene inches ouer, the stoole should not be aboue sixteene or seuteene inches one way, and nineteene or twentie at the most the other way.

15.
*Which way the
stooles should be
set.*

These stooles would be set toward the South, or rather a point or two into the West: that the Hiue may somewhat breake

breake the East-winde from the doore, *v.* and that the doore may be lightened by the Sunne-setting, when they returne late and loaded from field, *v.* and therefore it is to be wished that the Garden-fences did stand accordingly.

P. nos. 3.

P. nos. 4.

They should stand in straight rankes or rewes from East to West, five foot one from another (measuring from doore to doore) and from North to South, six foot one before an other.

16.

*How neere to
each other.*

Likewise let them stand as farre from three of the fences, as they doe one from an other. And so a plot of fiftie foot square, will receive seven rankes of nine stooles a peece, with the space of eight foot before them: which if it were bigger, were so much the better.

17.

*How neere to the
fences.*

For want of roome or stooles, or wit, many doe set their stalls neerer together. But the greater distance is much better: not onely that you may haue roome enough to goe round about euery one, to see and mend what is amisse; but also that the Bees, when they come home in haste, specially when a swarme goeth backe againe, may be sure to flie into their owne Hiue. For if they stand neere together, at such time many will take the next Hiue for their owne, and then they fall together by the eares; *v.* and the Nymphs, when they go first abroad, wil by that occasion the sooner mistake: which if they doe, they dyc.

P. c. 5. n. 79.

The manner of placing the stooles in your Garden, with the distance of the rankes, I haue here expressed.



This Climactericall number of nine times seven, is a competent or rather complete store for any one Garden, though large and alone : which being well ordered, will yeeld the Bee-master the better part of a liberall maintenance : if any be so happy to attaine vnto it. So that I see no euill at all in this Number : although the sixtie three yeare of mans age, being likewise called *Climactericall*, (because it ariseth of nine Septenaries, as so many Climacters or Ladder-rounds) be counted of some, and those no small fooles too, a parles and ominous time : more dangerous for death, then all the other

other yeares of their life *. For which conceipt if you see no reason ; thinke it is grounded vpon good obseruations : for this is certaine, that a ladder of nine rounds hath bene fatall vnto many.

* Ptolomæus obliquè eos notat, qui climactericos annos faciunt ex numerorum sola obseruatione, ut enneadicos & hebdomaticos. Vnde multis molestia senectus superstitio super anno sexagesimo tertio, quoniam peius angui tigris: q; formidant: sed peccat in his vulgus errore veniali, qui Philosophi esse volunt, qui excusauerit? Pic. Miran. Lib. 6. c. 19.

Answerable vnto this climactericall Squadron it is meet you haue at hand a *Register*, containing the seuerall ages and yearly increases of all your stalls. Whereby you may be directed euery yeare, which are to be taken and which to bee kept for store: *v:* which is the chiefe point of a thruiing Beemaster. This Register may bee a *Synopsis* or Table drawne vpon a sheet, or halfe-sheet of Paper, diuided into sixtie three squares, or as many as be needfull for the stalls in your Garden : hauing first the foure Coasts, *E. S. W. and N.* noted in the out-sides: secondly, the middle rew of squares from *S* to *N.* distinguished by Letters, the first square being marked aboue with *D*, the second with *C*, and the third with *B*, which are Southerne: The fourth (being the chiefe and middle-most, vnto which all the squares in the Table haue reference) with *A*, the fift with *B*, the sixth with *C*, the seuenth with *D*, which last three are Northerne: and thirdly, the first rew of squares next the Letters on both the *E* and *W* side, noted in the top or South-part with one *I*, the second on both sides with *II*, the third with *III*, and the fourth with *IV*.

The Table thus drawne, when you haue set a swarme vpon any stoole in the garden, marke in what letters ranke it is, what number from the Letter, and whether Eastward or Westward: and in the square answering thereto begin his Register, setting downe first the two last figures of the yeare of the Lord, then for a prime swarme, a double circle, for a castling halfe a double circle, then the day of the moneth in which he was swarmed, writing *M* for May, *I* for Iune, *J* for Iuly. The next line begin with the next yeare: if he did

E 3

swarme,

19.
The Bees Register.

V. c. 10. p. 1. m. 3

swarme, set down a crossed circle, and the day of the moneth: if he swarmed againe, set downe in the same line a halfe circle, with a downe-right stroke, and the day of the moneth: if he did not swarme, but were full to the doore, set downe a circle with a full point in it: if he did also lye out, set downe a circle with a blotted circle in it: if hee did neither lie out nor were full, set downe a void circle.



And then doe likewise all the yeares that this stall endureth. When the Table waxeth full; after the vindemie make a new: taking out of the old the Register of those that liue. By this meanes you may certainly know the age, and yearly increases of any stall in your Garden: and so guesse whether he be fitter to kill or to keepe. *V. c. 10. p. 1. 2. 3.*

^{20.}
The stooles height

Also the stooles should not stand above two foot from ground, because of the wind: nor vnder one foot for the dampnesse of the ground in winter, which would make the Hiues moist and mustie; and for the heat of the ground in Summer, which in hot and dry weather would make the Bees lye out, and so hinder both their worke and swarming. *v.*

V. c. 5. 19.

The best height is between eighteene and twentie inches. Yet if you haue many, it is conuenient that the more Northward rankes should stand higher, and the more Southward lower, descending by degrees from two foot to one: as if there be two rewes of stooles, let the first stand two foot from ground, the next eighteene inches, & the benches or swarme-stooles one foot or lesse. *v.* If there be three rankes beside the benches, let the second be twentie inches, and the third sixteene, &c.

v. 2. 12.

This vnequall height of rankes may as conueniently be effected, though the stooles be all equall, by the vnequall leuell of the ground: which in a great Bee-fold is best.

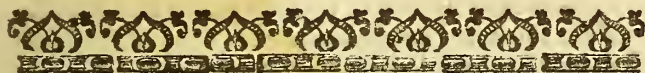
^{21.}
How to be footed.

The stone-stooles must be footed as they may: the fashion of each place where they are vsed will direct you. But the planks or wooden stooles are either to haue foure feet made of the heart of Oake, or of some other lasting Wood;

Of the Hives, and the Dressing of them.

C. 3.

orto be fastned to one foot with two wooden pins: which foot let be made of sound timber five or six inches ouer; and of that length, that it may be set betweene fiftene and eightene inches in the ground.



CHAP. III.

Of the Hives, and the Dressing of them.



IN some countries they vse strawne Hives bound with briar: in some wicker Hives made of Priuet, Withy, or Hazel, dawbed vsually with Cow-cloome tempered with grauelly dust, or sand, or ashes.

The strawne Hives when they are olde and loded, do vsually sinke on the one side, (specially if they take wet) and so break the combes and let out the hony: for which cause, first see that they be hard wrought, and then spleet them strong with a Cop, v. fitted to the top of the Hiue.

The Wicker Hives will still bear fault, and lie open, (if they be not often repaired) vnto Waspes, Robbers, & Mife. Any of these, if shee finde but a little chap, will dig her way in: and the Mouse (vntesse the twigs be close wrought) though she finde none.

Both these Hives, if they be not well couered, are subiect to wet: which maketh them rausty, and, if it be much, rotterh the combes, and destroyeth the Bees. But the heat in Summer, the cold in Winter, and the raine at all times doth soonest pierce the Wicker Hives: for which cause it is good to double-dawbe them.

All things considered, the strawne Hives are better, specially for small swarmes.

1.
Two sorts of Hives.

2.
Strawne Hives with their inconveniencies and remedies.
V. n. 11.

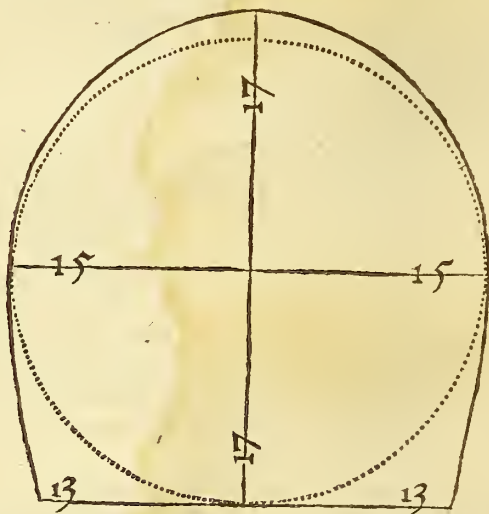
3.
Wicker-Hives with their inconveniencies and remedies.

4.
Strawne Hives best.

The

8.
The fashion of
Hives.

The Bees do best defend themselves from cold, when they hang round together in manner of a Sphere or Globe (which the Philosphers account the most perfect figure) and therefore the neerer the Hive commeth to the fashion thereof, the warmer and safer be the Bees. But of necessitie the bottome must be broad, for the vpright and sure standing of the Hive, and for the better taking out of the combs: and the top must rise some two or three inches higher then the iust forme of a Globe, to stay the hackle, and to shunne the raine: which yet, where the Hives are covered with pannes, is not necessary. Otherwise let your Hives vary no more from this round figure, then needs must: as where it is within from the top to the skirts seventeene inches, in the middle or widest place through the center fiftene inches, and at the skirts thirteene, after this forme.



This forme with his dimensions wil containe three pecks: and the abating of one inch in each dimension, abateth a gawne in the content.

The best that I haue seene are wrought by *Thomas May* of *Sunning*, about one mile from *Redding*.

Hives

and the Dressing of them.

C. 3.

Hiues are to be made of any size betweene a bushell and halfe a bushell : that any swarme, of what quantity or time soeuer, may be fitly hived. v: Lesse then halfe a bushell will not containe a competent stall ; and more then a bushell is found too bigge for any company to continue, and thrive together.

6.
The size of Hives

V. c. 5. n. 43.

The midling size of three pecks, or within a pottle, vnder or ouer, as fitly conteining the naturall quantity of a good stall, is most profitable.

Haue alwaies Hiues enough of all sorts (but most of the midling size) in store, lest they be to seeke when you should vse them.

The best time for making them, whether they be Strawne or Wicker, is in the three still moneths of Winter, *Sagittar. Capr.* and *Aquar. v:* for then the * straw; briars, and twigs are best in season : and then is it best to provide them, because then they are best cheape.

7.
When Hives are to be made and provided.
V. n. 54.

* The best straw is most yellow without blacke spots, which is strong and tough.

YOUR Hiue being ready is thus to be dressed : First, take away all those staring strawes, twigs, and other offensive jagges that are fast in the Hiue, making the in-side as smooth as may be: for these obstacles being many, if they cause not the Bees to forsake the Hiue, yet will they much trouble and hinder them : you may heare them (specially in the night) scraping and gnawing three or foure daies after they be hived, yea sometime a weeke together, as though there were misse in the Hiue : and in strawne Hiues a long time after.

8.
How Hives are to be dressed before they receive the swarmes.

9.
The pruning of Hives.

If you need but few Hiues you may prune them cleane with your knife : if you must vse many, then, hauing wet the skirts with a cloth, singe or sweale the in-side : but first and last rub it well with a Rubber, which is a peece of rough grind-stone or sand stone, as great as your hand can hold.

2. The Hiue being pruned, put Spleetes in it, a three or foure, as the largeness of the Hiue shall require : the vpper ends whereto set together at the top of the Hiue, and the nether ends fasten below in equall distance, about a handfull

10.
The spraying or plotting of them

F

about

11.

*The making of
the Cop, and of
the Spleets.*

about the skirt. In a wicker-Hiue let the vpper ends rest against the middle of the staffe, & the nether ends against the parts of it betweene the Wickers; and in a strawne Hiue, let the vpper ends together in a Cop, and the nether ends against the briars or threads, between the third & fourth roule.

The Coppe is a round peece of wood an inch or two thicke, whose lower *superficies* is flat, with a hole in the middle halfe an inch deepe, for the spleets to rest in; and the vpper is conuex, turned or hewed fit to the concauitie of the top of the Hiue.

And for the Spleets, take a streight hazel or willow-sticke, quarter it if it be bigge enough, else slit it: then shaue and smooch the clefts, and hauiug brought them to a conuenient strength & length, cut the lower ends forked, to stay against the Hives sides, and the vpper ends somewhat picked, and of that bignesse that they may fitly ioyne in the Cop or middle of the staffe, with their backs leaning hard and fast one against another.

^a If the Hiue containe about three peckes, it may well receiue foure Spleets: otherwise three will suffice.

^b Stiffe enough to keepe vp the Strawne Hives from sinking, specially when they are turned. *v. c. 5. n. 22. & 23.*

^c If you put foure Spleets in a Hiue, then cut their backes, where they must leane one against another, to square angles, such as be foure in a circle: if but three, cut them to obtuse angles, such as are three in a circle: (you may readily try them, before you put them in, by Moulds made iust to those formes) and so will they stand close and firme together. The first two of three, and the first three of foure are loose: it is the last that makes all fast.

And this is a handsome, easie, and sure way of spleeting: it is also good for drawing the Combes without breaking, and for keeping the Hiue from sinking and from tearing at the top. Besides which there are diuers sorts of spleeting, needlesse to be rehearsed: for euery Countrey hath his fashion.

12.

*The seasoning of
them.*

3 Lastly, in swarming time season the Hives that you meane to vse, rubbing them with sweet herbes such as the Bees loue, as Tyme, Sauourie, Marioram, Baulme, Fenell, Hyssop, Mallowes, Beane-tops, &c. And when the swarme

is setled, take the Hiue that you thinke fit for it in bignesse, v. and with a branch of Hazell, Oake, Willow, or any of the foresaid herbs, but chiefly with a sprig of that tree whercon the swarme lighted, wipe the Hiue cleane; and then dipping it into Meth, or faire water mixed with a little hony, or with milke and salt, or, for a need, with salt onely, besprinkle the same.

But if the Hiue haue beene vsed before, after you haue pared away the wax as cleane as may be, if you thinke the former dressing will not make it sweet enough; then let a hogge eat two or three handfulls of mault, or pease, or other corne in the Hiue: meane while doe you so turne the Hiue, that the some or froth, which the hogge maketh in eating, may goe all about the Hiue. And then wipe the Hiue lightlie with a linnen cloth, and so will the Bees like this Hiue better than a new. But besprinkle it also, when you doe vse it, as is shewed before. And so serue a new Hiue when the Bees are so froward, that they will not otherwise abide.

And thus are the Hiues to be prepared and Dressed, before they receiue the Bees. Now will I shew you how they are afterward to be fitted and furnished.

1. **F**irst, let them be alwaies well couered, that they may be safe in Summer from heat, lest the wax melting, the Combes fall downe; v. in Winter from cold, lest it kill the Bees; v. and at all times from raine, lest it corrupt first the Hiue, afterward the Combes, and at last the Bees also. v.

In some places (where the stalls are not many) they vse earthen covers: but these doe not defend the lower part, and in Summer are too hot.

The best couer for Hiues is a thicke hackle: *Alvearia stramento operiri utilissimum*. Which is thus to be made. Take foure or five handfulls of *Wheat or Rie leasd out of the sheafe: which being bound vp seuerally, beat out the corne; and then casting away their bands, draw out the eares of each handfull longer on the one side than on the other: and putting the long sides together (so to make the Head in forme of a Pyramis or Suger-loafe, for shooting the raine)

13.
The seasoning of
an old Hiue.

14.
How Hives are
to be ordered
when the Bees
are in them.

15.
The Hives al-
waies well hack-
led.
V. c. 7. n. 53.
V. c. 7. n. 54.
V. c. 7. n. 58.
Nat. hist. li. 21.
c. 14.

16.
How to make a
hackle.
* for want of
such straw,
Wood-benet, or
Sedge, or Rushes
may serue.

17.
The Cap of two
sorts.

18.
The wreathed
Cap.

binde them all in one vnder the eares, as hard as you can.

The Head is to be couered or bound fast with a Cap: of which there be two good fashions, the one wreathed, the other platted.

The wreathed Cap is thus made; hauing bound the bundles all fast together with a thong, cord, or other strong string, lease out of the sheafe almost a handfull of the strongest straw, and lay it in soake about a quarter of an houre. Being thus prepared, take out of that wet bundle a litche of 40. or 50. reedes or strawes; and laying halfe of them one way, and halfe the other, that the band may be of equall bignesse, take them vp together; and then mingling one end of the litche with the middle reeds of the Head, and twisting them fast together in your hand, let the band harle or double in the very top of the Head: and so begin to binde the Head round, working downeward, and still twisting the band as you goe. When that litche is well-nigh wrought vp, take out of the wet bundle so many more reedes prepared as before: and when you haue mingled one end thereof with the end of the first litche, holding them in your hand twist them fast together: and so continue your worke, alwaies binding as hard as you can, & bearing vp euery roule close to his fellow. When you are come down to the string, loose it, and binde the last or lowest roule in the place thereof, making fast the end, by forcing it vp between the Head and the Cap with a forked sticke and a mallet.

19.
The platted Cap.

The platted Cap is wrought contrary to the wreathed: for whereas that is begun in the crown, & wrought downward toward the right hand, and is made fast in the necke; this is begun at the necke, and wrought vpward toward the left hand, and is made fast in the crowne, after this manner.

First take a litch of strong reedes, and hauing wetted and wound it a little, put it about the necke of the hackle, and knitting the ends in a half knot, girt the hackle hard with it: (your assistant holding one end, while you pull the other) then to make this collar fast, wrap each end about it, forcing them betweene the collar and the head with the forke and mallet: Otherwise you may make a strong collar of a small
With.

With. The collar thus fitted to the necke, set the hackle betweene your legs, as you sit or stand, with the knot outward: and then, to begin, take vp a litche of the eares (about the bignesse of the top of your finger) next vnto the fore-said left end of the collar, and laying this end betweene it and the head, turne the top of the end downeward, and so leaue it: then take the next litch, and laying the first betweene it and the head, turne the first downeward, and so leaue it: then likewise take a third litche, and laying the second betweene it and the head, turne the second downeward, and so leaue it: likewise the fourth, and so forth, working thus round, till you come to the crowne, and platting still the litches hard, and close to the head. But when you come to the other end of the Collar, take that in for a litche. If the litches be too short for the worke, plucke them vp higher about the necke as you goe. When you haue wrought vp to the Crowne, knitting the foure last or top-litches in a true-loues-knot, make all fast.

The hackle thus made of foure or fise handfulls will containe in compasse about the necke, close vnder the Cap, betweene sixteen and twenty inches: sixteene will serue for the smaller Hiues, and twenty for the greatest, although they be fise foot about.

20.
*The bignesse of
the hackle.*

For the length of the hackles, each one is to be fitted to his Hiue, so that the skirts thereof may reach to the stoole, or within halfe an inch of it round about; saue onely before, where it must be pared somewhat shorter, that the Bees passage be not hindered.

21.
The length of it.

And then with a small pliant Garth or Belt of Bethwyn, Bramble, Brier, or the like, gird the hackle close to the Hiue*, lest the wind disorder it. If there be any crooke or bout in the Belt, set that before, that the hackle, bearing in that place farther out, may shoot the water from the doore: otherwise, for that purpose, set the Belt somewhat higher before, then behind.

22.
*The belt or
garth.*

*In the Winter, place the Belt below the middle or biggest part of the Hiue, to keepe it warme in extremity of cold. In Summer aboue, that the nether part of the hackle hanging out from the Hiue, the Hiue may be the cooler: and then because the Belt will be apt to rise, it would be held

downe to the place with two forked stickes, the fork resting vpon the Belt, and the other end vnder the Cap.

23.
The Hackle now
and then to be
taken off.

The Hackle thus fitted and placed, is now and then to be removed, not onely to meet with Mife, Moths, Spiders, Ere-wigs, &c. which harbour vnder it, and to see what breaches the Mouse and Tit-mouse haue made; but also to ayre the moist Hiue: and this in a warme and windy day after much wet.

24.
The Hives al-
waies close cloo-
med.

Nat. hist. li. 21.
cap. 14.

Next keepe the Hives alwaies close for defence of the Bees against their enemies. The best cloome for that purpose is made of Neats dung: *circumlini alveos fimo bubulo utilissimum*: but to harden it, temper it with Lime or Ashes, with sand or grauell, which are also good against the gnawing of Mife. With this cloome close vp the skirts & brackes of your Hives: that there be no way into them, but onely by the doores.

25.
Then seldome to
be mowed.

P. n. 41. 49.
53. & 67. & 68
& 9.

And being thus safely shut, moue them not without vrgent occasion; v. for often lifting vp the Hiue, and letting in the open aire doth discourage the stall.

26.
How a Hiue lif-
sed vp is to be
set downe again.

But whensoever you are occasioned so to doe (the Bees being stirring) lest any be crushed betweene the skirts and the stoole in setting it downe againe, teele vp one side with a little tile-shard: which, when the Bees are quiet, take away, and see the Hiue close cloomed againe.

27.
The Hiue-doore.

The Bees entrance, as anon in this Chapter is shewed, must be sometime larger, sometime lesse, sometime nothing at all. And therefore euery Bee-Hiue must haue his Gate or Summer-doore, a Winter-doore or wicker, a Barre or shutting of the wicker.

28.
The Gate or
Summer-doore

The Gate or Summer-doore must be made of that size, that the Bees in Summer, when their number is greatest, may haue aire enough, with free egress and regress, not letting one another. The space of foure square inches is sufficient for any stall.

This Summer-doore is made thus: First cut away the lowest roule the space of five inches: and, with the Briar or Thred which bound that part, make fast both ends. Then fill vp againe the two extreme halfe-inches of the space, with two Doore-posts.

The

The Doore-posts are two spleets halfe an inch broad, and five or six inches long, whereof the lowest inch is twice so thicke as the other, with a shouldering on the in-side. These Posts forced vp through the middle of the roules in their place, to the shouldering, as they serue to size out the Summer-doore to his due space of foure square inches; so are they fit to receiue the Winter-doore, v: when it shall be ioy-
ned vnto them.

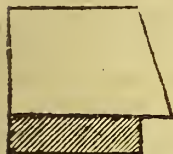
29
Of the doore-
posts, and the
use of them.

V. n. 30.

If the Hiue be with the least, you may set vp the Posts without cutting the roule.

In a Wicker-hiue the Summer-doore is made more easily.

Sometime, namely when a Hiue is reared, moueable posts are requisite: which may serue also at other times. A moueable Post is an inch-square peece of wood, with a shouldering about to rest against the Hiue: and an other in the in-side of the doore to fit the wicket: the forme is this.



The Winter-doore or Wicket is made of a peece of wood, an inch and a quarter thicke, almost an inch high, and five inches long. At each end whereof cut away halfe an inch all saue before, where that halfe inch in length must be least a quarter thicke, with his full heighth to fit the doore-posts: then in the middle of the neather side, cut, through the thicke-
ness, a hollownesse or passage, almost halfe an inch high, and three inches long: and then there will remaine at each end of the hollownesse halfe an inch vncut, besides the two extreme halfe inches least a quarter thicke, and fitted to the Posts.

30.
The Winter-
doore, or Wicket.

The fashion of which wicket you may see in this figure.

The



31.
The use of it

The use of the Winter-doore is to straighten the passage when there needeth not so much roome, that the Bees may the better keepe out the Robbers, that the Cold may haue the lesse force, and that the Mice may not enter, which in winter are wont to make much spoile. *v. c. 7. n. 3.*

32.
The Barre.

v. c. 7. n. 6.

The Barre or shutting is to be made foure square of some heauy matter, as namely of Lead (that neither the rough wind nor craftie Titmouse *v.* may remoue it) in *length, depth, and thickeesse fitting to the wicket: with some little hollownesse next the stoole, that may let in the aire, and not let out the Bees.

* The length may be three inches and an halfe, the thickeesse three quarters, the depth halfe an inch: and the length of the hollownesse two inches and an halfe, the depth halfe a quarter of an inch.

For want of Lead or other mettall, you may with a hammer and grind-stone fit a Tile-shard: but let that be somewhat broad, that it may lie the faster on the stoole.

33.
The use of it.

With this Barre you may shut or halfe shut the Wicket, as you shall see cause; to defend the Bees in the more dangerous times from Frost, Snow, Titmife, and Robbers.

For small stalls, the Gate, Wicket, and Barré, may be all of a lesse size.

34.
The Settle.

It is also conuenient for each hiue to haue his Settle before him: which may be a planke of the bredth of the stoole, and of that length that it may stand leaning from the ground to the fore-part of the stoole: that thereon the Bees may settle when they come wearie or thronging home, and so ascend to the doore; and that there they may sunne and refresh themselves being chilly and wearie. Otherwise you may make a narrow planke or boord to serue, fitting the length of it to the bredth of the stooles, and then the one edge leaning to the fore-part of the stoole, let the other be borne

borne vp with two forked stakes set fast in the ground, or by some other props.

Bee-hives being thus fitted with all necessaries, are afterward at diuers times of the yeare to be diuersly ordered.

The *Melissæan* yeare is most fitly measured by the Astronomical monethes (which begin with the Sunnes entrance into the seuerall signes of the Zodiack, and are therefore called by their names) because as the Sunne, entering into the twelue signes, and so beginning these twelue moneths, doth notoriously alter his course, making the daies longer or shorter, the aire warmer or colder, and the earth more fruitfull or barren, making also both the *Equinoctia* and *Solsticia*, in which the foure quarters of the yeare, Spring, Summer, Autumne and Winter take their beginnings; so the most notable alterations about Bees, in things either to be obserued in them, or to be done for them, doe likewise fall out in the beginnings of these moneths.

But the foure Quarters the Bees begin one moneth sooner then the Astronomers. For their Spring or first quarter beginneth with *Pisces*, when the Sunne beginneth by his quickning heat to reuiue the flowers, which all the dead of Winter lay buried in the ground; and the Bees hauing tasted thereof beginne to breed, v. and to increase their companies for the fruits of ensuing Summer, which from the former Summer hitherto haue daily decreased: the other Spring-moneths are *Aries* and *Taurus*, v. n. 63. &c.

Their Summer likewise containeth *Gemini*, *Cancer*, and *Leo*, most rich and plentiful in flowers and dewes, v: where-with the multiplied Bees doe now store their Cells against the penurie of Winter. v. n. 37.

Their Autumne or Haruest, hath *Virgo*, *Libra*, and *Scorpio*: in which the Bee-masters v: and the Master-Bees v: doe reape the ripe fruits of many Bees labours. v. n. 44.

And their Winter consisteth of the three still moneths: v. in which the Bees liue altogether vpon their Summer-store, and get nothing. v. n. 58.

Heere note, that although Winter and Summer doe properly

G

35.
How to order the
Bee-hives
throughout the
yeare.

36.
The moneths and
quarters of the
Melissæan yeare

Job:

V. c. 4. n. 12.

Mar: & April

May June & July

V. c. 6. n. 38. &c.

Aug: Sept: & October

V. c. 10. p. 1. n. 2.

V. c. 7. n. 25. &c.

28.

V. n. 59.

Psal. 74. 17.

Prov. 20. 4.

Za. 14. 8.

perly betoken two of the 4. quarters of the yeare; yet * sometime they be taken, according to the common account, for two halfe parts or moities thereof: the one containing the warmer season, as from the end of *Aries* to the end of *Libra*, the other the colder, as from the end of *Libra* to the end of *Aries*.

* Namely, when they are mentioned together in a kind of opposition: as c. 3. n. 7. where you reade, neither very cold in Winter, nor very hot in Summer. *Locus astate non fervidus, hyeme tepidus, &c.* Which two opposite parts the Poet doth fitly distinguish and describe by the two times of feeding and of pasturing Sheepe and Goats.

Georg. lib. 3.

— *Victum q. fires & virgea latus**Pabula, nec tot à claudis scenilia Bruma:**At verò Zephyris quum lata vocantibus Æstas,**In salua utrumq. gregem & Pascea missus.*

Metam. lib. 6.

But they are more certainly notified by the coming of the Fie!de fare, and of the Swallow: the one bringing cold Winter, the other warme Summer with her. Her Sister *Philomela*, that shrowdes hir selfe in the woods, is wont a litle to prevent hir, obseruing more the time of the yeare, then the disposition of the aire: For she is heard commonly the last weeke in *Aries*, though it bee then cold and winterly weather: whereas *Tringa* stayeth after that untill she finde it warme abroad. If some foolish one or other chance to start out of hir *Dormitorie* sooner, the Proverbe then is verified, One Swallow makes not a Summer.

37.
SUMMER.

V. n. 28.

The Spring having replenished the Hives with plentie of Bees, the Summer is readie with his plentie of Honie to entertaine them. During which season the Hives must haue their largest entrance: & lest the thronged multitudes be pestered for want of aire, or doe let one an other as they goe and come earnest in their worke, or bee stayed in swarming when they should passe at pleasure. Neither can the opennesse of the Hives be hurtfull vnto them; seeing now there is no feare of enemies.

At *Gemini* therefore set the doores v: wide open, without Barre or Wicket: and so let them stand all this quarter.

Gemini being past; if the weather be vsually coole; when there commeth a calme warme day, take off the hackles from those Hives that are likely to swarme. But if the weather be extreme hot and dry, then is it good to keepe on the hackles to coole the Hives, &c. v. c. 5. n. 21.

At mid-Cancer double the stalls that lie out. v. c. 5. n. 22. 23.

When

38.
In GEMINI
set the doores
wide open.

V. n. 28.

39.
CANCER.40.
To make the Bees
swarme.

May

June

and the Dressing of them.

When you would haue no more swarmes, as namely after the first blowing of Blackberries, *v:* which is commonly within a seuen night after Midsummer: set vp those Hiues that are full with three Tile-shards, or other things of like thicknesse, and cloome vp the space betweene the hieue and the stoole: If yet they chance to swarme, as soone as they are hieued, put them backe to the stocke, *v. c. 5. n. 11.*

Also reare the swarmes that being vnder-hieued doe lie forth, with bolsters of that thicknesse that may but let in the Bees.

In *Leo*, or presently after the last swarme, kill the Drones, of those stalls you meane to take, with a Drone pot cloomed to the doore. *V. c. 4. n. 35.*

And if you see any other so pestered with multitudes, that they are loath to meddle with them; you shall doe well to helpe them some warme afternoone, and then will they take the worke out of your hand, and spend the lesse time about it.

To the plentifull Summer succeedeth wastfull Autumne.

At *Virgo*, therefore, or a little before, (which is the most dangerous time for Bees, because of Wasps that then, if not sooner, learne the way into the Hiues, but chiefly of robbing Bees, which then begin to spoile) *v.* To the Gates of the weaker stalls, (whether they be small swarmes, or stocks that haue cast twice and late) set vp the Winter-doores, and fasten them with good cloome, *v:* and see that the Hiues bee close in all places. (Those that haue lien forth or otherwise be verie full, you may let alone and not straighten their entrance till the weather bee colder, for such are safe enough.) But first view your swarmes whether they fit their Hiues: those that haue not now wrought downe within a handfull of the stoole, if you meane to keepe them (to the end they may lye warme the Winter following, and be ready at the doores to keepe out robbers) cut off so much of the skirts as will serue the turne (the bigger the Hieue is, the more you may lessen him) and so set him downe, cut a Summer-doore *v:* in the skirt, and put to the Winter-doore. Without such help the cold will kill many, and weaken all, whereby they

G 2

become

C. 3.

41.

To keepe them
from swarming.
V. c. 5. n. 11.

42.
LEO.

July

43.

How and when
to kill the Drones.

44.

HARVEST

45.

VIRGO.

August

46.

To keepe the weaker
hiues from
robbing.

V. c. 7. n. 28.

47.

Set vp the Winter
doores.

V. n. 24.

V. n. 28.

Hist. l. 9. c. 40.

48.

And keepe them
shut til they offer
to go abroad.

V. n. 33.

49.

The reared stalls
now to be set
downe againe.

V. n. 41.

V. c. 1. n. 55.

V. c. 4. n. 25. &c.

V. n. 26.

50

In Virgo try
whether the Bees
will liue.

V. c. 7. n. 45.

become vnlustie in all their doings : as the Philosopher well noted, *Si alveus iusto amplior sit, desidiatores reddantur.*

Moreouer, because the Wasps and robbing Bees will bee stealing betimes, before the true Bees be stirring ; it is good in the euening, when the Bees are all in, to barre vp the Wickets of those that are weake, that a Bee cannot passe : and not to open the same the next day till the weather be warme, and the Bees offer to come abroad, though it be not before nine, or ten, or eleuen a clock : and then you may either open it, or halfe-open it, according to the flight of your Bees, v.

The stalls which you reared in the end of *Cancer* for feare of swarming or want of roome, v: (now that the death of the old Bees v: and of the Drones v: hath made roome) are to be set downe againe, v: lest their swarming be hindred the next yeare : vnlesse they be swarmed that haue wrought downe to the stoole.

Also in this moneth, about the middle, those Hives which you deeme to be weake because the Bees are gone vp from the doore, knocke with your hand, one after another : they that at the first or second stroke doe make a great noise both aboue and beneath, continuing the same for a space, haue store of Bees, and are therefore in lesse danger : but those that make a little short noise, though they be heauy and haue Honie enough (such as are commonly those of three yeare old, & vpward, that haue cast twice or oftner that yeare, and did not by *Virgo* beate away their Drones) yet haue they but few Bees, and are therefore ill able to resist the violent multitude of Robbers : which, when they perceiue their weaknesse, will neuer leaue them, as long as there is a drop of Honie in the Hieve.

If you see them once fighting, v. either presently take them, or make their entrance so narrow, that but one Bee may passe at once : and before *Libra* bee sure to take them. For though they escape this robbing-time through your care and diligence ; yet at the Spring they will surely yeeld, or die of themselves, or flie away. Note yet, that those stalls which are very full, will make but a little noise when you knocke them, (but different from the other, as being quicke, smart, and

June

Aug^rSept^r

and the Dressing of them.

C. 3.

and all ouer the Hiue) vnill toward the end of this moneth, when they be gone vp from the doore, and their number is somewhat diminished.

In the end of this moneth is the time to kill and drie Bees, *v. c. 10. part. 1. n. 2. & 13.* Some Bees faile after *Virgo*: and therefore it is good to make triall of them in *Libra* also, by poyſing and knocking the Hiues; for as they that then make * a little noiſe will die for lacke of company; ſo they that are light will die for lacke of meat. And alwaies haue an eye to thoſe that the Robbers doe eagerly haunt: which is a ſigne that they perceiue in them ſome defect or other: and therefore will not be answered without their errand.

* A little ſhort noiſe aboue in the Hiue, ſpecially when in the end ſome few ſingle Bees endeavour by their earneſt and continued ſound to ſeeme many, bewraith their paucity and decaying.

Such as by theſe meanes you finde vnlikely to liue, take or drie: thoſe that you ſuſpect, and yet are willing to keep; marke them, feed them in due time, and proue them againe in *Piſces* and *Aries*.

At *Libra*, or before if you ſee cauſe, ſet vp the Winter-doores of the beſt, and then diligently in the eueningſ ſhut all thoſe in with the Barre, that haue leaſt watching at the doore. For in the cold morningſ, while the true Bees keepe in, becauſe it is not fit time for them to gather in; the theeuſ, both Waſpes & Bees will be abroad, ſeeking where they may breake in and ſteale. But ſtill let the weaker haue their Wickets halfe-ſhut.

This ſhutting & opening of the Wickets muſt be continued throughout *Scorpio* alſo; vnleſſe abundance of cold raine do ſooner chaſten the Waſpes. But for the poore ſtallſ, it is beſt to keepe them halfe ſhut all the day long, as in *Virgo* and *Libra*.

At *Scorpio* dreſſe your Hiues for Winter. Firſt liſt vp the ſtallſ (except thoſe that be full of Bees, which will not need your helpe) and ſweepe the ſtooles cleane: then ſetting them downe againe warily, *v.* that you hurt no Bees, cloome them cloſe, and mend all brackes and faultſ about them: and where the hackleſ be worne, ſet new in their ſteadſ, that may keepe

51.
Now take the
Combes.

52.
LIBRA.

53.
Try them againe
in *Libra* alſo.

Sept

Feb & March

54.
Now ſet vp the
wicketſ to the
beſt, and keep the
reſt ſhut till the
Bees offer to goe
abroad.

Sept

55.
SCORPIO

56
Continue the
ſhutting and o-
pening of the
wicketſ this mo-
neth alſo.

Oct

57.
How to dreſſe
the Hiueſ for
Winter.
V. n. 26.

Aug & Sept

Octob

the Hives dry and warme. And now remember also to shut the wickets of them all.

58.

WINTER.

59.

SAGIT.

CAPRIC.

AQV AR.

three still moneths.

60.

How the Bees
spend their time
in them.

61.

The first sharpe
weather in Capr.
shut the Bees in.

V. c. 7. n. 6.

62.

And in pleasant
weather let them
loose, if it may
be, once a fortnight.

V. n. 59. & c. 1.
n. 59.

After Autumne, the Sunne drawing neere the Winter Tropicke, with a short and low course aboue our Horizon, there follow three still moneths, *Sagittarius*, *Capricornus*, and *Aquarius* : in which as the plants lie still in the earth waicing the Sunnes returne to reuiue them ; so the Bees lie still in their Hives, passing this fruitlesse time in sleepe and slumber. Yet so, that if there happen a milde and warme houre, they presently perceiuing it awake out of their swiuet, and hyethem out of doores with all alacrity : that they may take the fresh aire, recreate themselues, drinke, exercise their wings, carry out their dead and other noysomenesse, and lighten their little bellies, which are oft times so stuffed, when the weather suffereth them not to goe abroad, that they can hold no more: so loth are they to defile their nests. And hauing thus refreshed themselues, at their returne, they take their repast, and then betake them againe to their rest. But many such daies, specially in time of scarcity, are dangerous, as causing them to spend much of their store, which in still frosts they would spare.

The first foule and cold weather in *Capricorne* shut the Wickets close, to saue the Bees from the Tit-mouse, v. and from the cold, as well within the Hiue as without. For as the frost and snow and cold winds, yea and the ordinary disposition of the aire doth chill many of them, whom the flattering sun-shine enticeth abroad ; so the great frosts, striking through the doore, doe freeze the nethermost in the Hiue to death : so that by little and little many stalls in some winters haue beene thereby wholly destroyed: the which, by keeping them warme, might haue beene preferred. But when you shut them in, be sure the Hives be alwaies close and sure : for the Bees when they awake will striue by all meanes to come forth, though they neuer finde the way in againe. Yet when there happeneth any pleasant day (namely when the sunne shineth, the winde is still, or bloweth mildly out of the South or West, and the earth is without frost & snow) it is very behouefull to giue them leaue to play, v. and to refresh them.

Novem
Dec
Jan: 4

Dec

and the Dressing of them.

C. 3.

themselves : once in a fortnight or three weekes is to be wished, specially after *Capricorne* is past : but if you or the weather shut them in much longer, they will be so faint and feeble through their long restraint, that without very pleasant weather at their comming abroad, a number of them will be chilled while they rest themselves but a little in the open aire. And therefore as often as, for this purpose, the doore is a little opened ; alter it not, vntill the weather alter : and when *Aquarius* is halfe spent, if, for feare of a piercing night-frost, you barre them vp in the euening ; let them goe againe in the morning, vnlesse either snow or boysterous winde forbid you. In winter provide your Hiues: *v. n. 7.*

The still Moneths of Winter being past, the newyeere entreth with *Pisces*, the first moneth of the Spring : when the Plants begin to sprout, and the Bees to breed againe.

Now therefore, if not sooner, the weather being faire, halfe open the wickets of the better sort, and so let them stand day and night. For the night-cold, being now shorter and weaker, is not dangerous to such : and the day-cold doth them more good then hurt, causing them to lie still and spare their store, vntill it be fit time to goe abroad. But for the weaker swarmes (which are more subiect to cold, and robbing that now beginneth afresh, *v.*) shut them close in the euening, and open them not in the mornings vntill it be warme : and then giue them but roome for a Bee or two to passe, specially those that stand most warme in the Sunnes shine, which maketh the robbers able to endure the siege, whom otherwise the aires chilnesse would quickly discourage.

And now (the Bees beginning to breed, *v.*) is the time to dresse and fill their Troughs, which all the winter lay neglected.

At this time, in a morning before the Bees come much abroad, lift vp your Hiues: and quickly sweeping the dead Bees and other noysomenesse away, and scraping cleane the stooles, set them downe againe, *v.* and cloome them close as before. For albeit the Bees in time would rid them cleane themselves ; yet shall it be good for them to haue it done at

once,

62.
The SPRING.

64.
PISCES.

Feb:

65.
The first faire day in Pisces, let the Bees at libertie.

V. c. 7. n. 27.

66.
Now dresse their Troughs.

V. c. 4 n. 12. & c. 6. n. 33.

67.
Clense the stools.

V. n. 26.

once, that they be neither hindered, nor annoyed therewith: and now and then the carrying out of a dead Bee at this time of the yeere doth cost a quicke Bee hir life: for being drawne with the weight of the corps to the cold ground; while she standeth panting a little, she is chilled, and so not able to rise any more.

This cleansing of the stooles, after a calme *Aquarius*, when the Bees haue beene much abroad, is not so necessarie, and specially for the better stalls.

Those that by their lightnesse you perceiue to lacke honey, you may now saue by feeding, *v. c. 8. n. 11.* or driuing them into others that haue store. *v. c. 10. p. 1. n. 15.*

Aries is almost as dangerous a moneth, for robbing, as *Virgo*: and therefore you must haue a care in the euenings to shut the Wickets, & in the mornings not, before it be warme, to halfe-open them againe: and where the drie winds and hot sunne haue shrunke the cloome, be carefull to fill vp the chinkes againe.

The poore stalls this moneth would be halfe-shut all the day, as in *Virgo* and *Libra*.

At *Taurus*, and sooner, if sooner you see * cause, removing the Barres from the better stalls, set the Wickets open: and for the weaker sort, let them all this moneth be shut in the euenings: and in the mornings, as soone as it is warme, be but halfe-opened.

* That is, when either they keepe watch at the doore in the euenings, or be so encreased that they cannot easily passe to and fro in their worke: for if the passage seeme too streight onely in their playing fit, *v. c. 1. n. 59.* that maketh no matter.

At *Gemini* take away the Wickets from the better, & the Barres from the weaker stalls: and when this moneth is halfe past, make them all alike: leauing the doores as they were in *Gemini* before. *v. n. 38.*

68.
And feeds or
driue light stalls.

March 69.
ARIES.

70.
The second chiefe
robbing time.

April 71.
In TAURVS
remove the bars.

May 72.
In GEMINI
the Winter-
doores.

CHAP. IIII.

Of the Breeding of Bees, and
of the Drone.

THE Drone, which is a grosse Hiue-Bee without sting, hath beene alwaies reputed a greedy lozell: (and therefore hee that is quicke at meat and slow at worke is fitted with this title) for howsoever he braue it with his round veluet cap, his side gowne, his full panch, and his lowd

voice; yet is he but an idle companion, liuing by the sweat of others brows. For hee worketh not at all, either at home or abroad, and yet spendeth as much as two labourers: you shall neuer finde his maw without a good drop of the purest nectar. In the heat of the day he flieth abroad, aloft, and about, and that with no small noyse, as though he would doe some great act: but it is onely for his pleasure, and to get him a stomach, and then returnes he presently to his cheere.

Faci cum exeunt, efferunt sese fusim in sublimi, gyroq. volitant: quod ubi satis jam fecerint, redeunt domum, & epulis perfruuntur. But for all this there is such necessary vse of him, that he may not be spared, as without whom the Bee cannot bee.

The generall opinion anent the Drone is, that he is made of a hony-Bee, that hath lost hir sting: which is euen as likelie, as that a dwarfe hauing his guts pulled out, should become a gyant. Others seeing the fondnesse of this opinion, haue thought and taught that the Drone is a different species, and that as Bees breed Bees, so Drones breed Drones: which conceit (if the Author had obserued, that at the time of their breeding and many moneths before, there is not a Drone left aliue to breed them) hee would haue liked as well as the

H

former.

1.
*The Drone no
labourer.*

Hist. an. li. 9. c.
40. p. 157.

2.
*Diuers opinions
of the Drones o-
riginal.*

The nature of the
Drones.

former. These opinions then, being one as likely as another, let them goe together. [The truth is, they are of the same species with the hony-Bee, but of a different Sex.]

3.
The Drone is the
Male-Bee.

V. c. 1. n. 53.
V. c. 6. n. 6. & 7

V. n. 18.

4.
Divers reasons
proving the
Drone to be the
Male.

The first reason
is, that they are
suffered in breed-
ing time onely.

V. n. 18. & 19.
Nat. hist. li. 11.
c. 11.
V. s. 5. n. 4.

5.
The second rea-
son is, that the
Drones being ta-
ken away in
breeding time,
the Bees breed no
more.

V. c. 6. n. 18.

V. c. 6. n. 19.
& 20.

V. c. 7. n. 27.

For albeit he be not seene to ingender with the hony-bee, v. either abroad, as other *insecta* doe, or within the Hiue, (where yet you may by means behold what they do,) v. yet without doubt is he the Male-Bee, by whose naturall heat and masculine vertue the hony-Bee, which breedeth both hony-Bees and Drones, v. secretly conceiueth.

The reasons that moue me thus to thinke, are these. First, because although they be great wasters of the Bees store, yet vntill they begin to leaue breeding, and haue conceiued for the next yeere, (which some doe about *Leo*, most before *Virgo*) they suffer them: afterward they begin to beat them away. Which if some doe not, before *Scorpio* they die naturally: and from thenceforth all the Winter, vntill the Bees breed new againe, v. there is not a Drone to be had *In rerum natura*. When they are quite gone, then doe the Bees lay no more seeds that yeere, but onely hatch and breed vp those that are already in the celles.

Secondly, as the rather and the more the Drones are, the more and greater are the swarmes; (*Certe quo maior fuerit furorum multitudo, eo maior fiet examinum proventus*; v.) so where the Drones are few and late, there is small increase: and therefore if you kill the Drones of a Hiue before the Bees haue done swarming and breeding, (as some fondly haue done before Mid-sommer, to saue their hony from these lazie lurchers) neither will the swarmes come forth that were formerly bred, nor the stocke thenceforth breed any more. After which time bringing in *Ambrosia*, v. as much as before, and hauing no young ones to spend part, they lay it vp carelesly in their cells, where it corrupteth and turneth to stinking stopping, v. which will cause them so much to mislike their Hiue, that the next *Virgo* they will easily yeeld to the Robbers, v. And if by your industry they be then preferued; in *Pisces*, when breeding time is, finding their wombes barren, and therefore loathing euen themselues and all, they yeeld their goods to them that will take it: and after

July —
August —
October —

August —

February —

after a while, when the strange Bees and they smell all alike, by conuersing together in the same Hiue, and sucking the same hony, away they goe with them to their Drones. But euery faire day they will returne to fetch that they leaft behinde them : you may see them flie so thicke to and fro that hiue, as if it were full of Bees : but when night is come, they are all gone.

Thirdly, because *omne simile generat sibi simile*, Euery liuing thing doth breed Male, or Female of his kinde, and experience doth teach vs that the Bees doe yeerely breed, as well Drones as honi-bees ; v. seeing the honi-bees are females, it followeth necessarily that the Drones are the Males of the same kinde. And therefore in the learned Languages the Drone hath his * Masculine appellation, as the Honi-bee hir feminine.

* *Hic fucus, ὁ κηφῶδ : As hac apis, ἡ μέλισσα, כְּבוֹרָה, cum ἡ feminino. Melissa the daughter of Melissus King of Crete, being one of Jupiters nurces, is said to haue beene by him transformed into the Honi-Bee : which retaineth still her gender, sex, and name. Didymus agit duas Melissa fuisse filias, Amaltheam & Melissam, qua leuem puerum caprino lacte & melle nutrierunt. Laet. lib. 1. instit. c. 22. Nec sane rustico dignum est sciscitari, fueritne mulier pulcherrima specie Melissa, quam Iupiter in Apem conuertit. Columella, lib. 10. c. 2.*

6.
The third reason is, that they are bred by the Bees.

V. * in annot. p. n 12, &c.

Deborah.

Fourthly, we see the like in the likest *insecta*, the Waspe and the Dorre : for the manifesting wherof I wil briefly shew you the breeding of them both.

The Waspes nest is begun by one great Waspe, which you may therefore call the Mother-waspe: the which in *Cancer* (or in hot and dry springs somewhat rather) within some hole, vsually made in the ground by a Moale, Mouse, or other meanes, worketh a Comb of the vtrer drix of pales, or other timber, in forme of a round tent hanging by the top to the ouer-part of the hole. This combe containeth about six Cells, of the bignesse and fashion of the Bees cells, wherein she breedeth so many young ones: which, when they are fledged, doe breed as well as their dam: and so enlarge the combe to some eight inches ouer. Then, making more room beneath by moining and carrying out the earth, they hang an other combe vnder the first, by little pinns, and so an other,

7.
The fourth reason is, that the wasps and dorres haue drones, which are their males

8.
The breeding of wasps by drones.

H.A. 1.9.c.42.

August

September

and another, increasing still in the same place till Summer be done. For they goe not forth in swarmes as Bees doe. *Missio, ut apum, nulla vel crabronum vel vesparum fieri solet: sed qui subinde oriantur novelli ibidem manent, & alveum, terra egesta, faciunt ampliorem.* When their breeding draweth toward an end, namely in *Virgo* and after, (besides the small or ordinary Wasps, which lie in all the vpper combs) in the last or lowest combe, made for the nonce with larger cells fit for larger bodies, they breed also two other sorts, Drones or Male-wasps (which are somewhat bigger and longer then the small Wasps, and without stings as the Drone-bees) and Mother-Wasps, which are like the small ones in all respects, save that they are twice so bigge. These when they are fledge hauing conceiued, as the Bees, by the Drones; in *Libra*, and sometime sooner, doe flie abroad (as their Drones also doe) gathering for themselues, and searching and prying into euery corner as they goe, for their Winter-lodging: and after a while, when the aire waxeth cold, leauing both Drones and small Wasps to the mercy of Winter (which with his first cold-wet wether chilleth and killeth them as they flie abroad) doe forthwith betake themselues to some warme place, as the thatch of an house, a mortice in a post, an auger-hole, or the like; but specially into hollow trees, (which is the cause, why in grounds adioyning to Woods their neasts will be most rife) where they abide till the next spring without any meate, as it were in a dead sleepe: out of the which neuertheless a little warmth of the fire, or of your hand will awake them at any time. At the blowing of *Palme*, if the wether be warme, they flie abroad for food: and in *Cancer* or *Gemini*, as I haue said, they begin to nestle and breed. He that killeth one of them, killeth a whole neast of Wasps. *

June or May

* When the old Mother-Waspe hath done breeding, and hir wings are so worn, that she is not able to helpe herselfe, the little ones keepe her so long as they liue together. Before the young Mother-Wasps are bred, you may easily finde her among the little ones: but when they are fledge, you cannot knowe her from one of them, but by hir ragged wings.

And

And that the Drone-wasps are the males, some were of opinion in the daies of Aristotle: for thus he writeth; *Si vespam ex pedibus ceperis bombilareq; siveris, advolant quæ aculeos carent: quod non faciunt quæ aculeata sunt.* Itaq; argumentum quidam hoc utuntur quod alteræ mares sunt, alteræ fœminæ: which argument seemeth not vnprobable, seeing the Fowlers counterfeiting the call of the Hen-Quailes catch onely the Cocks.

The Dorre likewise beginneth hir nest single, being more like the Bee then the Wasp, in that she maketh Honie, and more vnlike in the fashion of hir Combs: for she hath onely a few round cels of the bignesse of grapes, lying flat on the ground one vpon another without any order: the which are made after this manner. First either vpon the ground in the grasse, or in some shallow hole within the ground, shee prepareth a little stuffe which is soft like Wax, but browne and more brittle, of the bignesse of hir head; and therein she layeth about six or seuen seedes together, compassing them round with the same stuffe: which increaseth by little and little as the seedes doe: and when they begin to liue, it groweth into so many seuerall Cells, as there are grubs, each one hauing one to himselfe. When they be come to their bignesse, the Cells, which before were browne and brittle, doe now wax white and tough, that you can scarce teare them. And when the Dorres are ripe, they gnaw their way out at the top. Vpon these they make more in like manner, and the void open Cells they fill with Honie, wherewith they feed both themselves and their young, when the weather suffereth them not to flie abroad. All this nest is couered with a little Mousse like a Birds-nest. Vntill *Leo* they breed females onely as the Wasps doe: and then last of all, for propagation of their kind, they breed their Drones, being likewise, as the Drones of Bees and Wasps, without stings. And these, to put the matter out of doubt, within a moneth after when they are ripe, doe openly engender with their females, as the chaffers doe, but their mates they choose in the nest, and are carried away by them. After which time the females breed no more till the next Summer,

*If you take a wasp
by its feet and nippin
it with a pin. it will say:
those which are
without a sting
will fly to it."*

9.
The breeding of
Dorres by drones.

July

Procellaria

July

V. n. 19.

though you may see them gathering, and flying about somewhat longer then the Waspses. In *Sagittarius* they betake themselves to their Winter-rest, where they lie single as the Mother-Waspe in a sleepe or swiuer. But the Drone-dorres, as the Drone-waspses, are destroyed by the weather: not one afterward to be seene till next *Leo*, when the females breed new againe. But one thing in the Dorres and Waspses is more strange, then in the Bees. For whereas the Bees alsoone as they haue bred their first brood of females, doe presently breed Drones, *v.* (both which, when they are ripe, multiply together) the young Dorres and Waspses in the beginning of Summer, doe not immediatly take the Drones (for then there are none) but receiue from their dams, together with their nature and being, that Masculine seed, whereby when they are ripe they breed all the Summer following, vntill in the end they likewise conceiue by their late-bred Drones for the next yeare, both for themselves and the young that shall come of them.

20.
The first reason is
the apparent
signes of their
Sex.

21
Aristotles Ob-
jection answered.
Hul. 5. c. 21.
Generat. l. 3. c.
10.

V. n. 22.

By this time thou wilt say with me, that the Drone is the male-Bee: Whereof if some curious Chirurgion would make an Anotomie, he should easily discern *Duos amplos & candidos testes*, two lawfull witnesses of his Masculine Sex.

This truth began to appeare many yeares agoe, euen in *Aristotles* time. *Aliqui* (saith he) *mares esse fucos, fœminas vero apes esse contendunt*. Which opinion he reciteth in another place. *Sunt qui fucos mares esse, apes fœminas arbitrentur*. Where though he doe not approue it; yet hath he no other reason against it but this, *Arma ad pugnam viresq; exercendas nulli fœminæ à naturâ tribuuntur*. Nature hath armed no female for fight and force against the male: but the Bees haue power and weapon to chastice the Drones: *v.* and therefore the Drones cannot be their males.

The weaknesse of which reason I maruaile he did not see, seeing in all the kinde of *Hawkes the female doth command the male, as being both stronger and better armed. Whereunto may bee added the example of the *Amazons* reigning in his time: who by force of armes subdued many Kingdomes of men, and held them in subiection: like vnto which,

and of the Drone.

C. 4.

which, it is maruaile but there were then some mankind Viragoes in Greece, as well as there benow in other Countries. Which thing, if nothing else, the experience of his Masters † Master might haue taught him.

* The first instance is beyond exception: neither doe I see how the other can be answered, vlesse peradventure it be replied that such rule is against Nature.

† Aristotle his Master was Plato, whose Master was Socrates, whose Master was Xantippe that thurfdring shewing Queene of Shrewes. Xantippe Socrati Philosophi vxor morosa admodum fuisse fertur & iracunda: irarumq; & molestiarum muliebrum per diem perq; noctem scatebat. A. Gellius l. 1. c. 17. Socrates, cum in eum Xantippe primis convitiis & maledicta inieisset, postea vero & sordidu aqua perfudisset, Nunc (inquit) dicebam Xantippen tonantem quandoque pluituram? Laertius lib. 2. in vita Socratis.

But you must vnderstand that the Philosophier speaketh thus, not dogmaticè but disputatiue, onely by way of reasoning: for in the end of the same chapter he yeeldeth himselfe to haue no certaine knowledge thereof. *Non tamen satis adhuc explorata qua eveniant habemus.*

TO returne therefore to our purpose, the Hony-Bees hauing, as those other insecta, conceiued by the Drones; the best about Pifces when they first gather vpon flowers, others in Aries, and the weaker later, begin their breeding: which is continued all the Summer, euen to the end of Virgo. But the chiefe time is in Aries, Taurus, and Gemini: which moneths yeeld Ambrosia the Schadons food, in greatest plenty, varietie and vertue.

The Bees will be sure to serue themselues first, their first generation being alwaies females: which they breed after this manner.

Close vnder the Honie (which is at that time altogether in the vpper parts of the Combs) in the middle of the botomes of the void Cels, as the Waspes doe on the one side, they lay their seedes, about the bignesse of those which the Butter-flie leaues vpon the Cabage-leaues: but of different colour, the Bees being white like Wasp-seedes, and the Butter-flies yellow. And so they descend by degrees toward the neather part of the Combes, filling one Cell after another. Although when the chiefe breeding is past, they

12.
When the Bees
begin to breed.

v Feb.
v March
v Aug.

13.
The chiefe time
of breeding.

14.
The first breed
are females.

15.
The manner of
their breeding.

16.

The Bee-seed is
first turned into
a Worme.

they doe not precisely obserue this order, but lay vp their Honie promiscuously among the young Bees, where they finde the Cells void. The Bee-seed at the first sticketh vpon one end, vntill it be a liue Worme or Grub: as soone as it liueth it is loose, and lyeth in the bottome of the Cell round like a ring, one end touching the other, till so the bottome can no longer containe it: after that, it lieth along in the Cell till it be growen to the full bignesse of a Bee: and then doth the Worme die, and becommeth void of all motion and sense: and so is shut vp in the Cell, the Bees couering the top close with wax.

17.

The Worme be-
ing dead grow-
eth to the shape
of a Bee and then
liueth againe.

The Grub being now dead, presently beginneth the alteration from a Worme to a Bee: which, is two-fold, in shape and in colour: the first alteration in shape, is the diuision in the middle; then the other diuision betweene the head and shoulders, whence it is called *insectum*: after that, the growth of the head, legges, wings, and other parts into their shape and fashion. The first that altereth in colour from white to browne is the vpper part, and of the vpper part the head, and of the head the eyes.

The vniforme shape and white colour of the Worme, being thus altered into the proportioned shape and brownish colour of a Bee, she beginneth to moue againe, and to liue hir second life: and then breaking the couer wherewith she was inclosed in the Cell, she commeth forth a flying Bird.

Hist. an. l. 5. c. 22

Fœtu posito incubant, exclusus inde vermiculus, dum parvus est, jacet in fævo obliquus: postea sua ipse facultate se erigit, cibumq; capit. Fœtus apum & fucorum candidus est: ex quo vermiculi fiunt, qui in apes fucosq; transeunt. And all this within the space of a moneth. Yea in swarming-time, when the Hiuies haue more heat, partly from the aire, and partly from the multitude of Bees; when also the *Schadans* neuer want their fill of *Nectar*, *Ambrosia*, and faire water continually brought in fresh and fresh vnto them; I haue knowne this effected in three weekes: although *Plinie* speakes of more then twice so long a time. *Fœtus intra 45. diem peragitur.*

18.

The breeding of
the Lady-Bees.

But the Lady-bees are bred in the seuerall Palaces of the
Queene,

and of the Drone.

Queene, v. after a peculiar and more excellent manner. For the golden matter whereof they are made, is not turned into a Worme at all; but immediatly receiue the shape of a Bee. *Primordium regum colore cernitur fulvo, corpulentia mellis crassioris, magnitudine ilico proxima sua futura soboli: nec primum ex eo vermiculus gignitur, sed statim apis. Item, Higinius negat ex vermiculo, ut cateras apes, fieri ducem; sed in circuitu fauorum paulo maiora, quam sint plebei seminis, inueniri foramina repleta quasi sorde rubri coloris, ex qua protinus alatus rex figuratur.*

When the old Bees haue ended their first broods of females, then last of all after the same manner in wider Cells made for the nonce, v. they breed the Male-bees or Drones: as was long since obserued, *Sunt fuci sine aculeo velut imperfecta apes, nouissimeq; a fessis & jam emeritis inchoata, serotinus factus.* And therefore some stalls doe not drone before Cancer, nor many before Gemini, nor any before Taurus: although you may see the * Nymphes of good stalls abroad in Aries, of others in Taurus, and of all in Gemini. By chance some few Cephens may be bred betime with the females: but they, as comming out of season, are not suffered to liue.

* The young Bees are called Schadons: *Schadones sobolem dico.* Hist. l. 5. c. 22. The brood of females, when they haue the shape of Bees, are called Nymphs, and the young Drones Cephens: *Catera turba, cum formam capere cepit, Nymphæ vocantur, ut fuci Cephemes.* Pl. li. 11. c. 11.

These Cephens or Drones, when they are fledged, doe not onely serue for generation; (as hath beene shewed) but also doe helpe the females much, by reason of their great heat, in hatching their broods. *In fortu adjuvant apes, multum ad calorem conferente turba.* And for these causes they are alwaies in breeding-time mingled with them throughout the Hiue. Although afterward (when they haue beene much beaten, and can goe no where single, but one or other will be on their jacks) they gather all together in a cluster, for their safetie in one side of the Hiue: so that it is true at some time which the Philosopher spake indefinitely, *Tenent alvei locum penitiorum.* And yet their hanging together will not serue

C. 4.

V. c. 6. n. 11. & 12

Hist. l. 5. c. 22.

Colum. l. 9. c. 11

19.

When the Drones are bred.

V. c. 6. n. 10.

Nat. hist. li. 11.

c. 11.

20.

When they come abroad.

21

Two uses of the Drones.

22.

Where they lye.

Hist. l. 9. c. 40.

Extraordinary
idea that
the Queen
does not
pass through
the state
of a larva
but at once
from the
egg she
becomes
a Nymph.

Higinius
denies that
the Queen is
formed of a worm
as other Bees
but that in the
circumference
of the honeycomb
there are found
straight holes some
what larger than
those of the plebeian
Seed filled as it
were with a sort of
substance of a red
colour, and filled
the winged
King is at
first formed:
teleformis.

Nat. hist. li. 11.

c. 11.

22.

Where they lye.

Hist. l. 9. c. 40.

serue their turne: for the Bees, when they are disposed, will quickly make them part, and depart. When there is no vse of them, there will be no roome for them.

23.
The male-Bees
are subject to
the females.

Nat. hist. l. 11.
cap. 81.

For the Drones are but vassals to the Honie-bees: which as they doe excell them in vertue and goodnesse, so doe they also in power and authoritie, ruling and ouer-ruling them at their pleasures. *Sunt quasi seruitia verarum apum: quomobrem imperant ijs.* For albeit generally among all creatures the males, as more worthy, doe master the females; yet in these, the females haue the preeminence: and, by the Grammarians leaue, the Feminine gender is more worthy then the Masculine, *Hec apes then hic focus, hac Nympha then hic Cephæn.* But let no nimble tongued Sophisters gather a false conclusion from these true premisses, that they, by the example of these, may arrogat to themselves the like superioritie: for *Ex particulare non est syllogizare*, and he that made these to command their males, commanded them to be commanded. But if they would so faine haue it so, let them first imitate their singular virtues, their continuall industry in gathering, their diligent watchfulnesse in keeping, their temperance, chastitie, cleanness, and discreet æconomic, &c. And then, if they meete with such dull Lubbers as these Drones are; they may with lesse blame borrow a point of the Law, and enioy their longing. Yet when they haue it, let them vse poore *Shinmington* as gently as they may; especially in publike, to hide his shame.

And this they may note by the way, that albeit the females in this kinde haue the Soueraigntie, yet haue the males the lowder voice: as it is in other liuing things, Doues, Owls, Thrushes, &c. the males being knowne by their sounding and shrill notes from the silent females. Yea the wiuies themselves will not suffer that Hen to liue, which presumeth to crow as the Cock doth: nature teaching, that silence and soft noise becommeth that Sex.

24.
When the Bees
leauē breeding,
and beat away
their Drones.

The Bees breeding or laying of seeds beginneth to cease, in some by *Leo*, in some not before *Virgo*. After which time these * *Amazonian* Dames, hauing conceived for the next yeare, begin to wax wearie of their mates, and to like their
roome

roome better then their company. At first not quite forgetting their old familiaritie, they gently giue them Tom Drums entertainment : they that will not take that for a warning, but presume to force in againe among them, are more shrewdly handled. You may sometime see a handfull or two before a Hiue, which they had killed within : but the greatest part flyeth away, and dieth abroad.

* Amazones bellicosæ erant Scythiæ mulieres, quæ cum viris exultantes in Cappadociæ ora juxta anmem Thermodontæ confederunt : ubi, viris plerisque; per insidias accolarum trucidatis, reliquos qui domi remanserant, ut ipsæ solæ rerum potirentur, interficiunt: & armis sumptis etiam cum contemptu hostium se strenue tuerunt, & imperium longe lateq; in Europam & Asiæ partem tandem proferunt. Ne vero genus periret, finitimos tanquam maritis utuntur : quos officio sanctos abigunt : Atq; quot pariunt virgines forwent, & armis exercent; masculos vero duræ enecant: vnde eas Æorpatæ i. Viricidas appellant Scythæ, ut tradit Herodot. l. 4. Prima harum regina Marthesia vel Marpesia dicebatur : quæ plures quidem peperit filias, Antiopen, Orithyam, Menalippen, & Hypoliten : è quibus duæ majores natu matri successerunt, cæteræ imperium non sunt adeptæ. Amazonum itaq; regnum apud rempublicam aptissime refert : Marpesia apud reginam quæ plures solet producere fœtus : Antiopæ & Orithyæ primores filias, quæ primum & secundum examen educunt, ipsæ moderantur : Menalippe & Hypolite eas principes quæ aut nequam aut nequiquam dominantur. Nam post secundum examen aut in alveis morantes morte mulctantur, & aut egressæ fere fame pereunt, &c. 8. n. 4. Vtriusq; etiam populi mores non minùs conveniunt: nam & apes fœminæ sunt bellicosæ, quæ non modo Europam & quandam Asiæ partem, ut illæ; sed universa orbis terrarum imperia possident: quæ sui sexus prolem summa iidem cura enutrientes, mares omnes tam viros quam filios cædere solent: ut & ipsæ vere Æorpatæ dici possint.

25.
The Bees company
red to the Amazons. Herodotus

p 248 by the library

V. 6. 1. 2. 7.

But because in the same Hiue they doe not leaue breeding all at once ; therefore neither doe they kill their Drones all at once : but at the first taking away onely the superfluous, they suffer as many as they need, to remaine longer : some sometime a whole moneth after. .

26.
They rid not
their Drones all
at once.

The forward stockes; that haue cast their last swarme in Gemini or soone after, begin at Leo : yea of those in the beginning of Gemini some somewhat sooner, the backward, that cast not their last swarme much before Leo, may stay till the end of the same moneth : but vsually about Virgo, or a weeke after, they make a cleane riddance of them.

27.
When forward
falls begin.

28.
When the back-
ward.

29.

When full stockes
that haue not
swarmed.

30.

When those that
are ouerswarmed

V. 11. 4.

31.

Sometime the
Bees cast out
euen the white
Cephens.

32.

Timely ridding
of Drones a good
signe.

33.

Sometime they
rid their Drones
in the Spring.

34.

And afterward
breed new again.

35.

Sometime it is
good to helpe the
Bees in this work.

Those stockes that being full haue not swarmed at all, because they are rich and feare no want, vse to suffer them so long and sometime longer, euen to the end of this moneth. Those that haue ouer-swarmed themselues, finding their paucitie and weaknesse, wax desperate and carelesse of their estate: and therefore sometime keepe their Drones till toward the end of *Virgo*, sometime kill them not at all: but let them alone, vntill they die by nature: which is not long after. For few of them can liue till *Libra*, and the youngest not to the end of that moneth. *v.* Take heed to such stalls, for they are likely to die.

Some are so prouident, that, to prevent this trouble and saue their Honie, they draw the poore Cephens out of their Cells before they be ripe, or come to their second life. Such you may safely trust.

Those that soonest rid their Drones, are likely to be forwardest the next yeare.

Sometime the Drones are beaten away in the Spring. For when forward stalls (which in their heat are bold to fly abroad when others dare not wagge) haue lost many of their Nymphes in a tempestuous and stormie Spring; they will therefore destroy their Drones also. But hauing formerly conceiued by them, they then begin the world anew, as after an other Winter: and first breeding Nymphs, in the end they breed Cephens againe. Which if they can compasse before swarming time be past, they will swarme that yeare: otherwise they will be fat and full, and excellent good either to keepe or kill.

Because the stockes that haue cast often, doe beare with their Drones so long, although there be twise so many as bee needfull for the Bees that are least; therefore (to saue the Honie which those Wolmores would deuoure) it is not amisse to prevent the Bees, and presently after the last swarme to diminish their number, with a Drone-pot cloomed to the doore: specially of them you meane to take, or see much oppress with superfluous multitude, *v. c. 3. n. 43.*



CHAP. V.

Of the Swarming of Bees, and the Hiuing of them.



THE stocks hauing bred and filled their Hiues doe send forth swarmes. A swarme doth consist of all such parts as the stocke doth: namely of a Queene-bee, Honic-bees as well old as young, and Drone-bees.

If any man desire to see the Queene, he hath now opportunitie, when she goeth forth with hir swarme: *v.* and dead ones hee may finde many before the stooles, when the stocks haue cast their last swarmes, *v.* and also when many meet in one swarme, *v. c. 1. n. 7.* But then, being dead and shrunke together by the force of the poison, they lose much of their stature and comlinesse.

Men thinke that the swarme consisteth onely of young Bees, and that the old Bees onely carrie behinde: but indeed (though it may seeme strange) the swarme is no younger, then the stocke: for there are in both of both sorts. The young Bees remaine in the stock with the old for their defence, and for the greatest labours; *v.* and the old ones goe with the young in the swarme for their aid and guidance in their worke.

The Drones they take with them for propagation of their kinde. *v.* And therefore those swarmes that haue many Drones will surely prosper: and if they be rathe will swarme againe, vnlesse they bee ouer-hiued: whereas those that haue few or none, will increase little or nothing all the Summer after.

A warme, calme, and showring spring causeth many and
I 3 rathe

1.
*The parts of a
swarme.*

2.
*When you may
see the Queene-
Bee.*
V. n. 34.
V. n. 35.

3.
*The swarme no
younger then the
stocke.*

V. c. 1. n. 57.

V. c. 4. n. 3.

4.
*Many Drones in
a swarme a good
signe.*

5.
*A kinde Spring
for swarmes.*

V. c. 7. n. 60.

Hist. l. 4. c. 22.

V. c. 4. n. 13.

V. c. 6. n. 38. 39.

C. 6.

V. c. 16. p. 1. &

iiij. & iiij. in v. 3.

V. c. 8. n. 5.

rather swarms, though sudden stormes doe hinder them. v.

Argent mella siccitates, sobolem imbres.

* Dry weather makes plenty of hony, and † moist of swarms. But note that the chiefe time for breeding swarms is the Spring, v. and for honie-gathering the Summer: v. so that when a dry Summer followeth a moist Spring, the Bee-folds are rich. If the Summer be also moist, the increase of Bees will be greater: but, because of the scarcity of hony, this increase will prooue a decrease: the more swarms you haue at the end of this Summer, the fewer stalls shall you haue at the beginning of the next. For, except some faire rather swarms, and some good stockes, which cast betimes or not at all, they die all for hunger; when they haue spent their owne pittance, and spoiled their fellowes. How to preuent this pouerty, see note 1 1. & * in 20. and to preuent the losse & spoile that would come thereof, take the light stockes, together with the small and late swarms, v. seed the midling sort, v. and be sure they be not ouer-hiued. v. n. 45.

* The reason is, that in hot and drie weather the hony dewes are raised, and the aduentitious moisture is drained from the flowers, the pure naturall iuice onely being left in them: of both which they gather all the day long without interruption.

† The reason is, that the weather keeping them in, they can doe nothing but breed and hatch their schadons: and when they goe abroad, they bring in grosse Bee meate, *Ambrosia* and water, wherewith to feed them; but can finde nothing fit to lay vp in store. So that moist weather giues them two causes of swarming, plenty of Bees, and penury of hony: the one makes them able, the other willing: and then neither winde, nor cloud, nor raine can stay them. Whereas in times of plenty it is otherwise. v. n. 20.

6.
Swarming weather.

V. n. 20.

7.
The swarming
houres.

Likewise, in warme and calme weather the swarms delight to arise, but specially in a heat-gleame, after that a showre or gloomie cloud hath sent them home together: in extreme hot and dry weather not so: v. in so much that stalls being full and ready to swarme with the first, are sometime so kept backe with cold dry windes in *Gemini*, and with extreme heat and drought in *Cancer*, that they haue not swarmed at all that yeere.

The swarms vse to come forth betweene the houres of
nine

May
June

and the Hiving of them.

C. 5.

nine and three, and sometime an houre sooner or later : but chiefly betweene eleuen and one. They choose rather the fore-noone, if the weather please them : otherwise they will stay for a faire houre in the after-noone. This time of the day therefore, in the swarming months, your Bees must continually be attended.

The swarming moneths are two, *Gemini* and *Cancer* : one moneth before the longest day, and an other after.

In some very backward yerres, such as was 1621. & 1622. there haue bin swarmes a weeke in *Leo*, which did well, (the Bramble, that was wont to be a fortnight or three weekes rather, *v.* not blowing before that time :) Likewise in warme Countries in a kinde Spring, some haue come somewhat before *Gemini*, but this also is rare.

Those that come before the Solstice, in the ascending of the Sunne, are rathe swarmes. Those that come after, in his descending, are late swarmes. But there are few that come in the first fortnight, and they very good : few also in the last fortnight, namely after *S. Peters*-tide, and they all as bad : vnlesse the backwardnesse of the yeere, when it happeneth, doe mend them.

Note heere that in the Heath-countrie, swarmes are vsually lateward, namely in the latter part of *Cancer* and the forepart of *Leo* : which some yeeres proue better then the rathe.

Those that swarme before the blowing of knap-weed, come in very good time: before the blowing of blackberies, *v.* they may liue and doe well : but blackbery-swarmes, specially castlings, are seldome to be kept, as being more likely to die then to liue : and if they liue, they seldome swarme the next yeere. And moreouer they weaken the stocks from whence they came, which otherwise the next yeere would swarme betime : and then one such swarme is worth three of those lateward ones. Wherefore put such backe againe into the stocke : which you may easily doe, so soone as they are hived, by knocking them downe vpon a table close to the doore : their fellowes that are behinde will soone be in with them. And if they rise againe, serue them so till they cease. But if you spie them rising before the *Queene* be come forth ; shut them in a while, and that will stay them.

8.
The two swarming moneths. *May & June*

July
V. c. 6. m.

39.
May.

9.
Rathe swarmes. *June 21.*

10.
Late swarmes.

June 29.

V. c. 6. m. 39. July
11.

Blacke-berie
swarmes are seldome to be kept.

12.

*A prime swarme
and an after-
swarme.*

13.

*A stall may cast
foure times.*

14

*Diuers causes of
breaking the
prime swarme.*

15.

*One prime-
swarme worl:
two after-
swarmes.*

V. n. 67. & 68.

16.

*The vulgar Bees
appoint the ri-
sing of the fore-
swarmes, & that
vpon 4. grounds.*

V. 6. I. n. 6. & 7.

17.

*Five signes of the
first swarming.*

V. 6. 4. n. 20.

A good stocke doth naturally and vsually cast twise ; a prime swarme, and an after-swarme : specially if the prime swarme be so rathe, that the casting may come before the bramble-buds be open : yea and rathe prime swarmes not ouer-hiued, in a plentifull yeere may swarme once or twice : although somefull stalls doe not cast once, some but once, and some hauing many princes (specially when the prime-swarm is broken) doe cast three or foure times. For sometime it happeneth that, in the swarming, a blacke cloud rising stayeth part of them that are already come forth, and lie about the hiues-doore : sometime when they are all vp, either fearing a cloud, or disliking the lighting-place, or being troubled in the huiuing, part doth returne.

One prime-swarme is worth two or three after-swarmes, except it be broken : and then if the residue come forth in one entire swarme, that after-swarme may bee the better of the twaine : but if it be diuided into two or three, then will they all be but indifferent : such, except they be timely, or vnited, v. can hardly liue till the next Summer.

The choice of the time when the first colonies, or prime-swarmes shall go forth, the rulers referre vnto the commons : who by reason of their continuall trauell and businesse both without and within, doe best know when all things are ready and fit for them : First within they will be sure that they haue a Prince ready to goe with them : for without a Gouer-nour they will not be, v. Then that their Hiue be full, so that it may be diuided at the least into two or three sufficient companies : one to remaine with *Marpesia* the old Queene, an other to go forth with *Antiope* the Prince, and a third hap-lie, which, together with the vnripe brood in the cels, may make an other swarme to serue *Orithya*. Without likewise they will see, first that the flowers be in state presentlie to furnish them with store of wax and hony : then that the weather do please them, as being warme and calme, & moist : vnlesse, being continually vnseasonable, they haue no choice.

v. 7. in n. 5.

When the Hiues begin to be full, they will dronie, or yeeld forth sledge-drones : v. which is a signe that the first brood

brood of nymphes haue beene a good while flying abroad, and are now able to endure both weather and labour.

Other signes of the Hiues fulnesse and readinesse to swarme are at the Hiue-doore, First, the Bees howering in cold euenings and mornings. Secondly, the moistnesse or sweating vpon the stoole. Thirdly, their hasty running vp & downe. Fourthly, their first lying forth in foggy and sultrie mornings & euenings, & going in again when the aire is cleere.

When they will swarme, sometime they first gather together without at the doore, not onely vpon the Hiue, but vpon the stoole also: where when you see them begin to hang one vpon another in swarming time, and not before, and to grow into a Cluster that couereth the stoole in any place; (specially if there be Drones among them) then be sure they will presently rise, if the weather hold. The first that come forth wil increse that Cluster to some fourth part of the swarme: and then begin they to flie away, first out of the Hiue, and after from the Cluster. But commonly some few of them doe first flie forth and play to & fro the Hiue-doore, so to till out more company vnto them: and when by this meanes they haue gotten out so many, that you may see them begin to dance v aboute the Hiue; then doe they hastily issue forth and swarme.

But heere you must note, that as to fill the Doore, or to lie forth a little now and then in foggie or sultrie mornings and euenings; (which is because then they are most offended by heat within, and can best indure the aire abroad) and otherwise to go in againe, is a signe that the Hiue is full, and therefore ready to swarme; so to lie forth continually (as in extreme hot and dry summers they vse to doe) vnder the stock or behinde the hiue, &c. (specially after Cancer is come in) is a signe and cause of not swarming. For the Bees, knowing by nature that the greatest companies doe prosper best, vntill they finde themselves so pestred with heat and throng of multitudes, that the Hiue can scarce hold any more, will haue no minde to swarme: and when they haue once taken to lie forth, the hiue will alwaies seem empty, as though they wanted company.

One cause of their lying forth, is stormie and windie weather

18.

The signes of present swarming.

V. 34

19.

To lie forth continually is a signe they will not swarme.

June

20.

The causes of their lying forth.

ther, not suffering them to swarme when they are ready : for when their number is growne so great through their continuall breeding, that the Hiue cannot hold them, seeing they may not swarme, they must needs, for want of aire & roome within, lie without : which when they haue once caught, they will hardlie leaue: and the longer they lie out, the lother they are to swarme.

An other cause of their lying forth, is continuall hot and drie weather, specially after the Solstice : which causing plentie of hony both in plants and dewes, their mindes are so set vpon that their chiefe delight;

Fig.

(*Tantus amor florum, & generandi gloria mellis*)

that they haue no leifure to swarme : although they might most safelie come abroad in such weather, which would not suffer the weakeft Nymph to fall.

And when by continuance of such honie-weather they are once sufficientlie provided, they will then be loth to leaue the sweet fruits of their labours, and to change their full store-houses for that which makes giddie House-wiues. But if they haue once begun a combe without where they lie, the matter is out of doubt. Whereas contrarily in wet and scanty Summers, no weather will stay them from swarming as soone as they are readie : although by that meanes (vnlesse they be rathe, or the weather sodainelie mend) most as well of the flockes as swarmes are like to die for hunger: and therefore, as neere as you can, so * order the matter, that your swarmes may come betime. For rathe swarmes and their stocks, that haue the summer before thē, proue alwaies good.

V. n. 5.

* By hauing faire and fat young flockes, in a good standing, not ouer-hiued, and well kept.

21.

The remedy and meanes to make them swarme.

But for those flockes, which not swarming in *Gemini* happen afterward to lie forth, this may be a remedy.

First keep the Hiue as coole as may be, by watering and shadowing both it, and the place where it standeth: and then enlarging the doore to giue them aire (alwaies provided that there be no backe-doore in the shadie parts of the Hiue) moue the cluster gentlie with your Brush, and driue them in.

If yet they lie forth and swarme not; (though they haue had fir weather two or three daies) then the next calme and warme day, betweene 11. and 1. of the clocke, or within an houre sooner or later, (when the Sunne shineth, and you see

no clouds comming to hide it) put in the better part, at the least, of them that lie out, with your Brush; and the rest gentle sweep away from the stoole, not suffering any to cluster againe. These rising in the calme heat of the Sunne, and flying about before the Hiue, will make such a noyse, as if they were swarming: which their fellowes hearing, will happlie come forth vnto them, and so begin to swarme.

If this doe not serue, but that returning to the Hiue they lie forth againe; then reare the Hiue high enough to let them in, and cloome vp the skirts all but the doore.

But if notwithstanding all this they doe not swarme; then assure your selfe that either they haue no Prince bred to goe forth with them, or else they are fat and full of honie, which they are resolu'd not to leaue.

And then if it be before Mid-Cancer, & the hony-weather hold; your best way is to double the stall, by turning the skirt of the Hiue vpward, and setting a leere prepared Hiue fast vpon it: into which they will ascend, and worke and breed there as well as in the old. *v.* In the end of *Virgo* driue them all into the new Hiue, (which then, if the weather haue held good, will be full of wax and hony) and take the olde for your labour. But if Mid-Cancer and the hony-dewes be past, (because they want time and meanes to store the void Hiue) let them stand: such a stall will be verie good to be taken; or, being young, to be kept. *v.* But first replenish some ouer-swarmers with his excessse or lying out (specially if you meane to take him) thus.

When all hope of their swarming is past, in some euening (while it is yet light) holding a Hiue vnder those that lie out, cut them off from the stoole with a * tight thread: and carrying them to an ouer-swarmers that you would mend, knock them downe on a Table close before his Hiue: into which, because they come without a Prince, they are quietly admitted, and quickly vnited vnder one common Commander.

The manner of doubling a stall is this: Hauing first measured the Hiue about in the largest place, provide a leere splected Hiue of the same size and compasse: make ready also two square sticke 13. or 14. inches long; and an inch thicke at one end, and halfe an inch at the other: these two

22.
What is to be
done to those
that by no means
will swarme.

June

V. n. 24.

August

June

U. s. 10. p. 1. n. 3.

23.
How to replenish
an ouer-swarm-
er.

* Held straight
betweene two
hands.

24.
How to double a
stall.

sticks lay parallel ouer the hiue fiue or six inches apart, and each of them a like distance from the middle of the Hiue, with both the thicke ends one way to size out the doore for this doubled stall: and so tie them with needle and thread to the skirts fast in their places. These stickes doe also serue to keepe the Hiue from slipping, and to save the Bees, that otherwise might be prest to death betweene the two skirts. Then in a faire night, so soon as it is dark, reare the full Hiue with three bolsters, two on the West side, and one on the East, some foure or fiue inches high, (or with a double rest) to let the Bees in: and couer both it and the stoole with a large Mantle. Then make a Brake behinde the stoole of foure stakes, 2. two foot, and 2. foure foot long, pitched fast in distance equall, and fit to containe the full Hiue: which you may be sure of by fitting it to the leere Hiue, being of the same compasse. One of the short stakes set close to the middle of the backe of the stoole, the other Northward opposite to it: one of the long ones on the West part, and the other on the East. Then right in the middle, betweene the stakes, digge a hole in the ground halfe a foot deepe; and of such compasse, that being halfe filled with a wisp of straw, it may firly receiue the top of the Hiue, and so the Hiue may stand vpright and fast in the Brake. Then pare away the inner edges of the tops of the short stakes, that the Hiue in the setting downe may not stay against them: and taking vp the West-stake, sticke it by you.

These things thus prepared, your selfe standing on the West side of the Brake, and your assistant on the same side of the stoole at your right hand, (both in your complete harnessse) v: let the assistant take hold of the Hiue, & yeelding the top toward his breast, reare the fur-side of the skirt from the East-bolster. When you see it siting, embracing the hiue as neere the skirt as you may, lift it vp sheere from the other two bolsters, and set it downe warily in the middle of the Brake, with the top in the hole as vpright as you can, and the doore to the backer part of the stoole, that it may stand South-ward as it did before. And presently let your assistant, being readie, place the leere prepared hiue euen vpon it, with the thick ends of the stickes South-ward: and doe
you

The Brake.

P. 6. l. 11. 40.

and the Hiuing of them.

C. 5.

you put the long stake into his place againe. Then cloome the Hiues together with rolles, flatted, that none of the cloome fall in among the Bees, leauing open the space betweene the sticks ends for the new doore of this double huiue. Lastly put on the hackle, and gird both it and the long stakes to the leere-hiue, about the middle with a Belt, and about the top with a With. And so let them stand till after the end of the *Dog-daies*, when Bees are taken. *v.* But in no case let the doing hereof be deferred beyond the time prescribed, *v:* lest you haue little or nothing for your labour.

P. c. 10. p. 1. n. 1.

P. n. 12.

At the Vindemie, in a faire calme morning before any Bees be abroad, shut vp close all the stalls in your Garden: and those that stand next couer with sheetes and blankets, lest some of the younger sort mistake, and farrie at their doores till they be chilled. And when the Sunne is an houre high, and the aire waxeth warme, hauing first parted the new Combs and the old with a long knife, take off the vpper huiue or *Receiuer*, & set him vpon the stoole in the old place: *Bv 1* besure, &c. *as it followeth, c. 10. p. 1. n. 15.* If you see the *Receiuer* be very fat, or feare the Queene be hurt, or not in the *Receiuer*; your best and safest way is to take them both: for if they be ouer-fat or want a Ruler, vndoubtedly they will not prosper.

25.
How to drine all
the Bees into the
new huiue, and so
to take the old.

*Artificial
Swarm.*

The signes of after-swarmes are more certaine. For where-as the rising of the prime swarme is appointed by the vulgar, whose chiefe rule is the fulnesse of the Hiue; the Hiue being now well emptied, for other swarmes there needeth some other direction; which the Rulers themselues doe giue by their voices: without which that stocke will swarme no more that yeare. And yer the choice of the houre, yea and of the day among foure or siue is permitted vnto them, as best knowing the disposition of the weather.

26.
The signes of
after swarmes.

When the prime swarme is gone (if the stocke shall cast any more) the eighth or ninth euening after, sometime the tenth or eleuenth, the next Prince, when she perceiuerh a competent number to be sledge and readie, beginneth to tune in hir treble voice a mournfull and begging note, as if she did pray hir Queene-mother to let them goe: Vnto which voice if the Queene vouchsafe to reply, tuning hir

27.
The rising of the
after-swarmes is
appointed by the
Rulers.

28.
The Bees Musick

P. n. 36.

Base to the young Princes *Treble*, (as commonly she doth, though sometime scarcely intreated in a day or two) then doth she consent. And therefore, vnlesse foule weather stay them till it bee too late, *v:* you may assuredly looke for a swarme. Which seldome ariseth the next day, although the weather be verie pleasant; or the next day, vnlesse the weather bee verie pleasant: but after the third nights warning, they will accept indifferent weather, such as the prime-swarmes will not come abroad in. And as the Queenes voice is a grant, so hir silence is a flat deniall: the Prouerbe heere hath no place, *Qui tacet consentire videtur*: For without this Consent there is no Consent.

29.
The Princes
part.

This song being contained within the compasse of an *Eight* from *G-sol-fa-ut* to *C-sol-fa*, the Prince composeth hir part within the foure vpper *Cliefes* *G, A, B* and *C* vsually in triple moode, beginning with an odde *Minim* in *G-sol-re-ut*, and tuning the rest of hir notes, whereof the first is a *Semibriefe*; in *A-la-mi-re*. Sometime she taketh a higher key, sounding the odde *Minim* in *A-la-mi-re*, and the rest in *B-fa-b-mi*. Sometime, specially toward their comming forth, she riseth yet higher to *C-sol-fa*, holding the time of three or foure *Semibriefes*, more or lesse. Now and then shee beginneth in duple time some two or three *Semibriefes*, but alwaies endeth with *Minims* of the triple Moode.

30.
The Queenes
part.

The Queenes part, contained within the foure lower *Cliefes*, consisteth of *Minims* altogether in triple moode; commonly in *Fa-fa-ut*, sometime in *C-sol-fa-ut*, sometime in the other two *Cliefes* betweene them: continuing hir tune the time of nine or ten *Semibriefes* more or lesse.

31.
The other Ladies
parts.

Sometime a third Princess imitating the Queenes voice in time, though differing haply in tune, ioyneth with them, the more, with their full noise, to incite the swarme to goe, that hir turne may come the sooner. And sometime a fourth also interposeth hir *Minims* to fill vp the *Quire*. But none dare counterfeite the voice of the chiefe Prince, for that were treason to hir person (and yet sometime one of them, in hope to part the swarme, will steale out with hir:) which, if the swarme be not parted, or being parted be put together, costeth her hir life *v:* as well as the liues of some of hir followers.

lowers. Notwithstanding each of these, when hir elder sister is gone, and hir turne next, changerth hir note, begging in *Orithyas* tune leaue to be gone too: which as sometime the Queene granteth vnasked, beginning first hir selfe; so sometime by hir silence she denieth, though mournfully intreated: and then the swarme tarieth, and the poore Ladie must die.

With these various and harmonious notes, answering one an other, and some pawfes betweene, they goe solemnly round about the Hiue, so to giue warning vnto all the company. This they continue daily vtill their swarming: but you may heare them best euenings and mornings. Which Musicke as it cannot but please and delight them that listen to it; so must it be most sweet and pleasant to the young Prince hir selfe, vnto whom therby is proclaimed a Warrant, not onely of hir life, but of a Kingdome also: both which otherwise she were sure to lose.

In this *Melissomelos*, or Bees Madrigall, Musicians may see the grounds of their Art: first their *Moodes*, sometime the triple or imperfect of the more, sometime the duple or imperfect of the lesse: then the tunes of the six notes, *ut, re, mi, fa, sol, la*; whereof the Queene soundeth the first toure, and the Prince the other two, together with the doubling of *fa-sol* in two higher Cliefes, to make vp the full *Eight*: and lastly the six Concords, an imperfect *Third*, a perfect *Third*, a *Diateffaron*, a *Diapente*, a *Sixt*, and a *Diapason*. And if any man dislike the harshnesse of the *Seconds* and *Seuenths*, which now and then hit among them; he sheweth himselfe no experienced Artist, which knoweth not that as well in *Musick* as *Oeconomick*, there must sometime be *Discords*: yea and that in either they haue their laudable vse, as seruing to make sweet Concords the sweeter. So that if *Musicke* were lost, it might be found with the * *Muses* Birds.

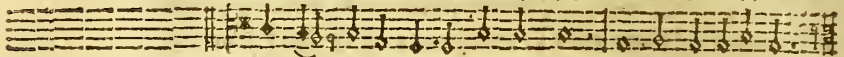
32.
In the Bees song
are the grounds
of Musicke.

The seuerall parts of whose Song comprizing these mentioned notes, with pauses interposed (as I haue at seuerall times by a Winde-instrument, whose notes can neither rise nor fall, attentiuely obserued) I thought good heere to prick downe, that you may see in them all these particulars of their Naturall Art. Onely I cannot altogether warrant the Conclusion: because in that confused noise, which the buzzing Bees in the busie time of their departing doe make, my dull hearing could not perfectly apprehend it: so that I was faine to make vp that, as I could. But I am sure, if I misse, I will not be a little

* Var. l. 3. c. 15.
V. Prafat.

This fairest Ladies sweetest mournfull voice,
 Hark, hark, me thinks I heare in Notes of choice,
 Doth march along.
 This Arme royall gallantly
 Some thousand strong
 And then, when fit time they cly,
 Her mount heull suit a joyfull end doth take:
 To sweetest Treble tuning sweeter Bate;
 To sweetest Treble tuning sweeter Bate;
 Vouchsafe with Trine Asped reply to make,
 To whose graue accents if hir Princely Grace

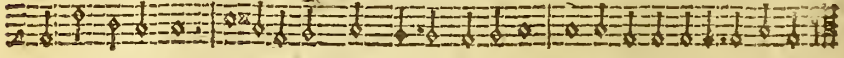
and Ori- thyja faire, VWith o- ther Princes bir In- fantes are,
 most sober and most chaste, Their paine-got goods in pleasure scorne to vvaite,



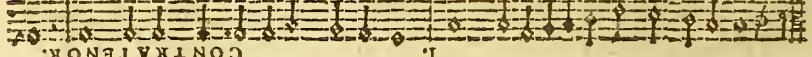
weaker sex (so great in field) No povvers of the mightest Males can make to yeeld: They living aye,
 one commands this people loyall, The great Marpese vwith plenty blest of issue roy- all: An- ti- o- pe



famous Amazons excels the rest, That on this earthie Sphere haue euer bin, VVhose lit- tle hearts in
 Mexa- gonis no Be-za- leell, for curious Art may passe, or imitate, One Sou- raign and but



They work in common for the common vveale: Their labour's relesse to maintaine their states: Their
 s of all states the Monarchie is best, so of all Monarchies that Fe- wl- nine, Of

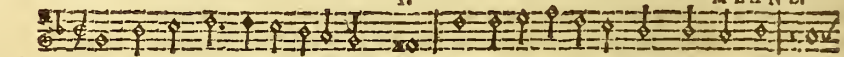


CONTRATENOR:

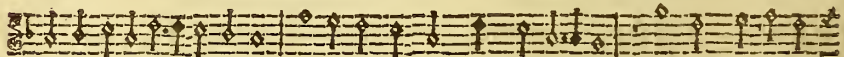
I.

I.

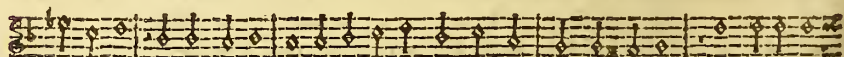
MEANE.



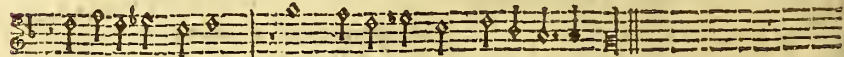
A S of all states the Monarchie is best, So of all Monarchies that Fe- wl- nine, Of
 They work in common for the common vveale: Their labour's relesse to maintaine their states: Their



famous Amazons excels the rest, That on this earthie Sphere haue euer bin, VVhose lit- tle hearts in
 Mexa. gonis no Be-za- leell, for curious Art may passe, or imitate, One Sou- raign and but



weaker sex (so great in field) No povvers of the mightest Males can make to yeeld: They living aye,
 one commands this people loyall, the great Marpese vwith plenty blest of issue roy- all: An- ti- o- pe.



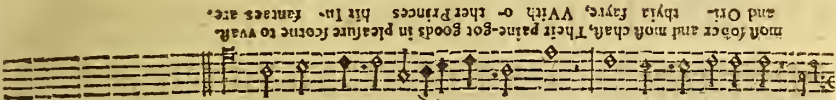
most sober and most chaste, Their paine-got goods in pleasure scorne to vvaite,
 and Ori- thyja faire, VWith o- ther Princes bir In- fantes are.

When so increased is this prudent Nation,
 That their owne limits cannot them suffice;
 To seeke new Cities, for new habitation,
 They send abroad their num'rous Colonies:
 Antiope the prime Prince gone,
 Orisbya loone

Of hir Queene-mother, making mone,
 Begs the like boone:

That with hir traine hir fortune she may seeke:
 And this she sings in measures mournfull sweete.

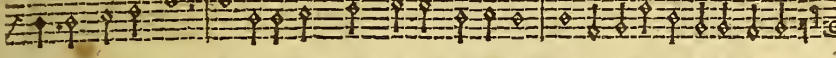
And this the fings in wearfull sweete.
That with his fortune she may tecke:
Begg the like drone:
Of his Queene-mother, making none,
O mya foene
Amuse the prime Prince gone,
They send abroad their numerous Colonies:
To tecke new Cities, for new habitation,
That their owne limbes cannot them suffice;
When to increate is this prudent Nation,
With o- ther Princes hit In- fantaes are.



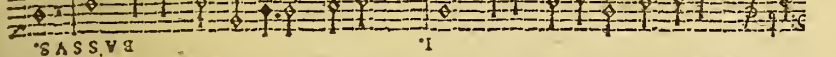
weaker sex (so great in field) No power of the mightiest Males can make to yeeld: They living aye,
one commands this people loyall, the great Marpese with plenty blest of issue roy- all: An- ti- o- pe



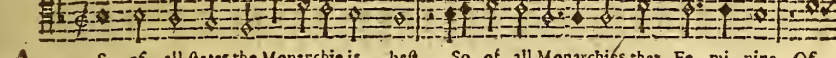
famous Amazons excels the rest, That on this earthie Sphære haue euer bin, VVhose lit- tle hearts in
Hexa- gonis no Be-za- lell, for curious Art may passe, or imitate, One Sou'raigne and but



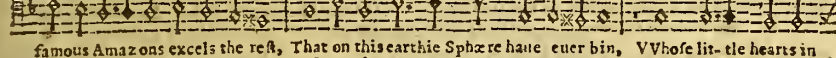
They work in common for the common weale: Their labour's rebblesse to maintaine their state: Their
s of all states the Monarchie is best, so of all Monarchies that Fe- mi- nine, Of
A S of all states the Monarchie is best, so of all Monarchies that Fe- mi- nine, Of



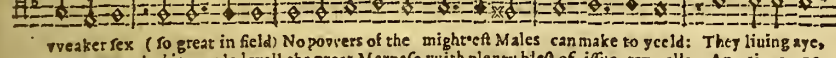
weaker sex (so great in field) No power of the mightiest Males can make to yeeld: They living aye,
one commands this people loyall, the great Marpese with plenty blest of issue roy- all: An- ti- o- pe



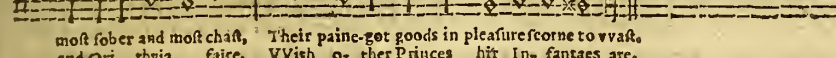
famous Amazons excels the rest, That on this earthie Sphære haue euer bin, VVhose lit- tle hearts in
Hexa- gonis no Be-za- lell, for curious Art may passe, or imitate, One Sou'raigne and but



weaker sex (so great in field) No power of the mightiest Males can make to yeeld: They living aye,
one commands this people loyall, the great Marpese with plenty blest of issue roy- all: An- ti- o- pe



most sober and most chaste, Their paine-got goods in pleasure come to vvaile,
and Ori- thyja saike, VVith o- ther Princes hit In- fantaes are.



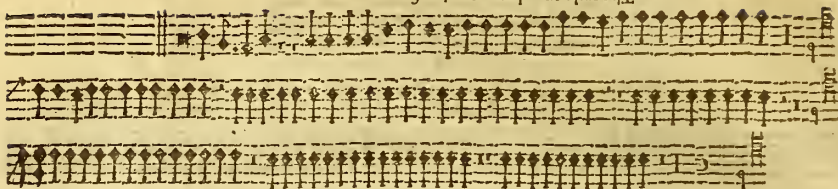
To whose graue accents if his Princely Grace
Vouchsafe with Trine Aspect reply to make,
To sweetest Treble tuning sweeter Base;
His mournfull suite a joyfull end doth take:

And then, when fit time they espy,
Some thousands strong
This Armie royall gallantly
Doth march along.

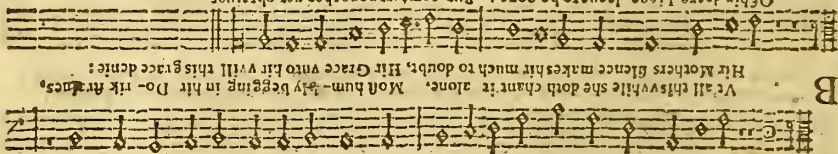
Harke, harke, methinks I heare in Notes of choice,
This fairest Ladies sweetest mournfull voice,

I.

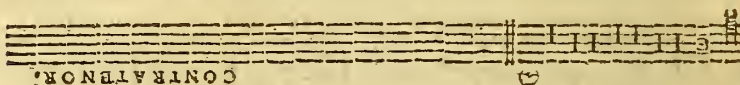
The vulgar, when occas on serves,
 (This watch-word past) abroad doe he:
 Where, treading the Hey, right nimble they pance,
 Thus waiting their Prince in and out they trace:
 Who come, these Maides the Morrice dance,
 Along vnto their resting-place,



Of hir deare Lige leane to be gone: But comfort none she yet obtaines.
 But still hir suite shee doth hold out, In hope at last to moue pittie.

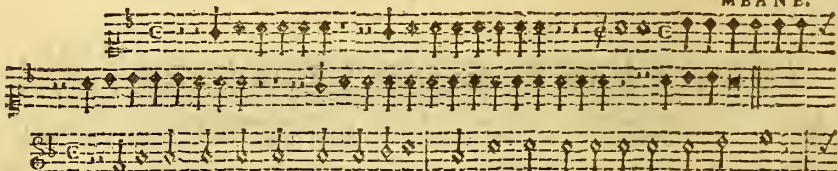


Ve all thisvvhile shee doth chant it alone. Most humbly begging in hir Do-rik straines,
 Hir Mothers silence makes hir much to doubt, Hir Grace vnto hir vwill this grace denie:

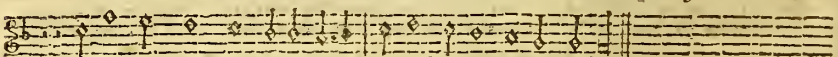


CONTRATENO.

MEANE.



Ve all thisvvhile, shee doth chant it alone, Most humbly begging in hir Do-rik straines,
 Hir Mothers silence makes her much to doubt, Hir Grace vnto hir vwill this grace denie:



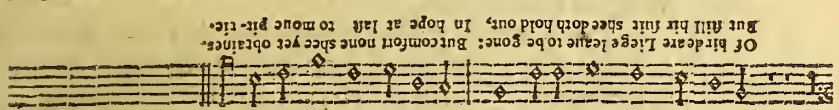
Of hir deare Lige leane to be gone, But comfort none she yet obtaines.
 But still hir suite shee doth hold out, In hope at last to moue pittie.



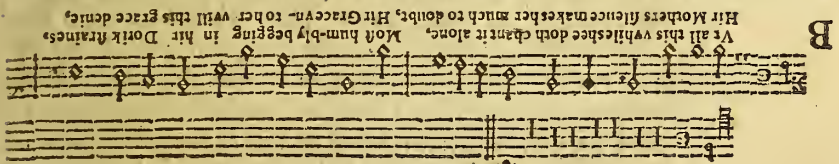
Importunate Orithya now hath wonne
 Hir sterne Queene-Mothers grant to hir desire:
 For Ioy, hir Sisters all as one
 With cheerefull tones fill vp the Quire.
 These Ladies Muscicall Confort assures
 The Prince his much-desired Sou'raigntie:

The Prince, his much-desired Soveraignty:
 These Ladies Muskeall Comfort affires
 With cheerefull tones fill vp the Queene
 For Joy, his Sisters all as one
 His Aierne Queene Mothers grant to his desire:
 Importunate Orthyia now hath wronne

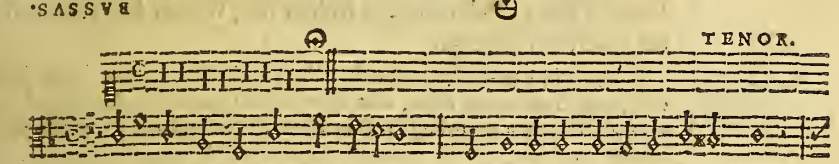
Sing this to the second Tune: and then end with the first verse of the first
 Song: repeating in either the two last Straines.



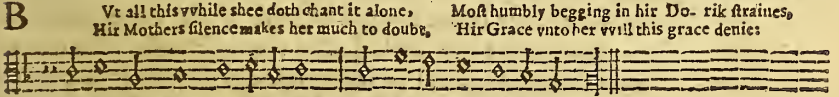
Of hir deare Liege leaue to be gone: But comfort none shee yet obtaines.
 But still his suite shee doth hold out, In hope at last to moue pittie.



Ve all this while shee doth chaunt it alone, Most humbly begging in hir Do. rik straines,
 Her Mothers silence makes her much to doubt, Her Grace vnto her will this grace denies.



TENOR.



Ve all this while shee doth chaunt it alone, Most humbly begging in hir Do. rik straines,
 Her Mothers silence makes her much to doubt, Her Grace vnto her will this grace denies.

Of hir deare Liege leaue to be gone: But comfort none shee yet obtaines.
 But still his suite shee doth hold out, In hope at last to moue pittie.



Sing this to the second Tune: and then end with the first verse of the first
 Song: repeating in either the two last Straines.

The vulgar, when occas'on serues,
 (This watch-word past) abroad doe hee.
 Where treading the Hey, right nimble they prance,
 Thus waiting their Prince in and out they trace:
 Who come, these Maids the Morice dance,
 Along vnto their resting-place.

33.
*Before swarming
the voices come
downe to the
stoole.*

34.
*The manner of
their swarming.*

In the morning before the swarme come abroad, these Ladies come downe neerer the stoole: and there they hold on their melodie somewhat longer, singing sometime aboute twentie notes together, and with shorter pauses.

At the very swarming-time they descend to the stoole: where answering one another in more earnest manner, with thicker & shriller notes, the mainie begins to march along; thronging one another for haste, and buzzing with their wings in great iolitic.

As soone as these gallant Nymphs are aloft, they doe most nimbly bestirre themselues, sporting and playing in and out as if they were dancing the Hey; in this manner wairing for the comming of their Prince. Now when some two third parts or three fourth parts of the swarme is passed, the Musicke ceaseth, and * then commeth forth this stately Dame *Orithya*: who walking a turne or two before the doore (of purpose, you would thinke, to be seene) she takes hir leaue, leauing but a small traine to follow her, which high them after as fast as they can.

* Sometime when ill weather hath kept in the swarme ouer long, shee will come forth before them, as it were checking their sicknesse and timidity: but then returning in, she commeth forth afterward in hir due place.

This decent order the great Lords of the earth seeme to haue learned of this little Ladie: who in their Country-progresses, goings to Parliament, and other solemne processions, doe send the greatest and fairest part of their retinew before them, hauing behinde but a small troope of necessarie attendants, to guard their persons.

35.
*The prime
swarme being
broken, the next
may call and
swarme within
the eighth day*

If the prime swarme be broken, the second will both call, and swarme the sooner; it may be the next day: and by that occasion haply a third also may arise, yea and sometime a fourth.

But all within a fortnight after the prime swarme.

36.
*All the swarmes
of one hie come
within a fort-
night.*

Except in some extraordinarie plentifull yeares both for Breed and Honie. Such as was 1616; wherein not onely many swarmes did swarme as old stockes; but also old stockes hauing betimes swarmed twice, about six weekes after began to swarme a fresh, as in an other yeare: and so had, in effect, two Summers in one.

After

After the second swarme, I haue heard a young Ladie-bee call: but the Queene, not willing to part with any more of hir companie, did not answer: and the next day she with seuen more were brought forth dead, v.

P. c. 1. n. 7.

Sometime though the Queene giue consent to a third or fourth, the Bees seeing the stock little enough to liue, shew themselves loth to goe: and then also there is no way with her, but one.

When the swarme is vp, and busie in their dance, v: it is a common vse, for want of other Musicke, to play them a fit of mirth with a Pan, Kettle, Bason, Candlesticke, or other like Instrument, so to stay them, forsooth, from flying away. Indeed where other Bee-folds are not farre off, this vse hath a good vse: for thereby the place and time of their rising is publicly notified, and so a iust and open claime laid vnto the Swarme, that otherwise some false neighbour might challenge for his: which vndoubtedly was the originall cause of this custome. But the pretended reason is to me a meere fancie: although I know it to bee as ancient as common. For

37.

What vse there is of tinging the swarme.

P. n. 34. My wife vses this reason for the note of the Queene Bee being drowned, w^{ch} is a note of y^e Bees, y^e other Bees through want of y^e Bees, fly in small troops to some house or other place, whether y^e Queene Bee seems following, the best way to it is also, & thereby the swarme settles. It may also be true to giue the Bees notice, that they are to therefore not to be so long as follows the Bees for their house, as a small mistle upon a settle to me. for they may think that they are still where they are. Do 6. consolations to Honorij. being so with a bee, my wife w^{ch} began at some.

—————Cybeleia quassans

Hiblaus procul ara senex revocare fugaces
Tinnitu conatur apes. —————

And before him Virgil,

Hinc ubi jam emissum caveis ad sidera cæli
Nare per æstatem liquidam suspexeris agmen, &c.
Tinnitusque cie, & matris quate cymbala circum:
Ipsa confident medicatis sedibus, ipsa
Intima more suo sese in cunabula condent.

Georg. 4.

And before him old Aristotle,

Gaudere etiam plausu, & sonitu apes videntur. Quapropter tinnitu aris aut Fictilis convocari eas in alveum aiunt.

If you see them begin to flie aloft (which is a token they would be gone) cast dust among them to make them come downe. If they will not be stayed, but, hasting on still, goe beyond your bounds; the ancient Law of Christendome

38.

What to doe if the swarme be way-ward.

permitteth you to pursue them whithersoever, for the recoverye of your owne.

Eugentes persequi possum in fundum alienum vel invito Domino ac verante. Lege Thesaurus § ad exhibendum. Quia ius cuique acquisitum ei conferri debet. Lege Patre. § de ijs qui sunt. Scius si apes feras novè in alieno prædio capterem. § Apium, in fine de rerum divisione.

But sometime they flye so fast and so farre before they pitch, that though you follow them neuer so fast, you must be content to leaue them, happily to the happy finder. For when you haue lost the sight and hearing of them, you haue lost al right and propertie in them.

Examen quod ex alveo tuo exlaverit, eousq; intelligitur esse tuum, donec in conspectu tuo est, nec difficile in persecutio ejus est: alioquin occupatio est. Iustinian. l. 2. institutionum juris. tit. de rerum divisione.

39.
Some swarms
provide them
houses afore-
hand.

40.
And then they
fly away direct-
ly to the place.

Sometime they will be provided of a house before they swarme, which some Harbingers haue found and viewed, and dressed against their comming: as either a hollow tree, or a void Hiue: and then will they away presently, and by no meanes settle till they come thither. Vnto which place they will flie, not, as at other times, vncertainly this way and that way; but as directly as they can guesse.

A poore Woman hauing taken a poore swarme to keepe for halse, by New-yeares-tide lost hir owne part and hir Partners: and being carelesse of the Hiue when the Bees were dead, she let it stand abroad till she had forgotten it: The next Summer comming into hir Garden, she found some Bees passing to and fro hir Hiue, which were then busie in cleansing and dressing it: shee wisely fearing that the Bees came to carrie away the Wax that was left, bade hir Daughter take the Hiue and carrie it in. The Wench following hir play did happily forget hir mothers command: and by that meanes the Hiue stood still, till the v unexpected swarme came, that after ward stored hir garden. It is not amisse therefore to follow the counsell of Columella: *Oportet autem vacua domicilia collocata in apiarijs habere. Nam sunt nonnulla examina que cum processerint, statim sedem sibi querant in proximo, (Seu potius prius quesitam, lustratam, & paratam ad-eant. v. n. 39.) eandemq; occupent quam vacuum repperint.*

Columella

41.
Vacua alpearia
sunt semper pa-
cata in Apiarijs.

When

and the Flying of them.

C. 5.

When your swarme hath made choice of a lighting place, you shall quickly see it knit together in forme (if nothing let) of a *Cone, Pine-ale, or cluster of grapes. As soone as it is settled, or at least as soone after as may be, hiue them. For the longer they hang, the lother they are to be put from the place, the more time they lose from their worke, and the more in danger are they to be gone, either home againe, or quite away. For when they are once settled, they presently send forth spies, to search out an abiding place: who if they retorne with good newes before swarming-time be past that day, they rise presently, and are gone: otherwise they will stay till swarming-time the next day. But whensoever the spies haue sped, they retorne with all speed, and no sooner doe they touch the Cone or Cluster, but they begin to shake their wings like as the Bees doe that are chilled: which the next perceiuing doe the like: and so doth this soft shiuering passe as a watch-word from one to another, vntill it come to the inmost Bees: whereby is caused a great hollownesse in the Cone. When you see them doe thus, then may you bid them farewell: for presently they begin to vnknit, and to be gone. And then though you Hiue them neuer so well, they will not abide.

When you see your swarme, first choose out a fit hiue, neither too big nor too little, but proportionable to the quantitie and time of the swarme: so that the Bees may fill it that yeere, or at the least within a handfull, which they may make vp the next yeere in good time.

A swarme before *Mid-gemini*, put into a Hiue that containeth twice so much as the *swarme is: a swarm at *Cancer*, into a Hiue that containeth so much, and halfe so much: and for a swarme at *Mid-cancer*, a Hiue, that will hold it or little more, may suffice. The rest betweene these let be fitted in like proportion vnto these.

For example, a swarme of three gawns, or a †good Prime-swarme before *Mid-Gemini*, will aske a Hiue of three pecks: such a one at *Cancer*, a Hiue of five gawnes. Likewise a double-prime swarme comming betime, is fitted with a bushell-Hiue: and all pecke-swarmes, and other single swarmes

43.
The Hining of Bees.

43.
When they are to be hined.

* A Cone is a round Pyramin. *Figura rotunda ex lato in acutū desinens*: and therefore is a Pine-ale, of his figure, called *Conus*.

44.
The token of their flying away after they be settled.

45.
How to fit the Hines to the swarmes.

May June

permitteth you to pursue them whithersoever, for the recoverye of your owne.

Fugientes persequi possum in fundum alienum vel invito Domino ac venante. Lege Thesaurus § ad exhibendum. Quia ius cuique acquisitum ei conferri debet. Lege Patre. § de ijs qui sunt. Scius si apes feras novè in alieno prædio capterem. § Apium, in fine de rerum divisione.

But sometime they flye so fast and so farre before they pitch, that though you follow them neuer so fast, you must be content to leaue them, happily to the happy finder. For when you haue lost the sight and hearing of them, you haue lost al right and propertie in them.

Examen quod ex alveo tuo exclaverit, eouq; intelligitur esse tuum, donec in conspectu tuo est, nec diffiçiliter persecutio ejus est: alioquin occupantis est. Iustinian. l. 2. institutionum juris. tit. de rerum divisione.

39.
Some swarms
provide them
houses afore-
hand.

40.
And then they
fly away direct-
ly to the place.

Sometime they will be provided of a house before they swarme, which some Harbingers haue found and viewed, and dressed against their comming: as either a hollow tree, or a void Hiue: and then will they away presently, and by no meanes settle till they come thither. Vnto which place they will flie, not, as at other times; vncertainly this way and that way; but as directly as they can guesse.

A poore Woman hauing taken a poore swarme to keepe for halfe, by New-yeares-tide lost hir owne part and hir Partners: and being carelesse of the Hiue when the Bees were dead, she let it stand abroad till she had forgotten it: The next Summer comming into hir Garden, she found some Bees passing to and fro hir Hiue, which were then busie in cleanning and dressing it: shee wisely fearing that the Bees came to carrie away the Wax that was least, bade hir Daughter take the Hiue and carrie it in. The Wench following hir play did happily forget hir mothers command: and by that meanes the Hiue stood still, till the vnexpected swarme came, that afterward stored hir garden. It is not amisse therefore to follow the counsell of Columella: *Oportet autem vacua domicilia collocata in apiarijs habere. Nam sunt nonnulla examina que cum processerint, statim sedem sibi querant in proximo. (Seu potius prius quesitam, lustratam, & paratam ad-eant. v. n. 39.) eandemq; occupent quam vacuum repperint.*

Columella

41.
Vacua alvearia
sunt semper pa-
rata in Apiario.

When

and the *Hiving* of them.

C. 5.

WHen your swarme hath made choice of a lighting place, you shall quickly see it knit together in forme (if nothing let) of a * Cone, Pine-*aple*, or cluster of grapes. As soone as it is settled, or at least as soone after as may be, hieve them. For the longer they hang, the lother they are to be put from the place, the more time they lose from their worke, and the more in danger are they to be gone, either home againe, or quite away. For when they are once settled, they presently send forth spies, to search out an abiding place: who if they returne with good newes before swarming-time be past that day, they rise presently, and are gone: otherwise they will stay till swarming-time the next day. But whensoever the spies haue sped, they returne with all speed, and no sooner doe they touch the Cone or Cluster, but they begin to shake their wings like as the Bees doe that are chilled: which the next perceiuing doeth the like: and so doth this soft shiuering passe as a watch-word from one to another, vntill it come to the inmost Bees: whereby is caused a great hollownesse in the Cone. When you see them doe thus, then may you bid them farewell: for presently they begin to vnknit, and to be gone. And then though you Hieve them neuer so well, they will not abide.

When you see your swarme, first choose out a fit hieve, neither too big nor too little, but proportionable to the quantitie and time of the swarme: so that the Bees may fill it that yeere, or at the least within a handfull, which they may make vp the next yeere in good time.

A swarme before *Mid-gemini*, put into a Hieve that containeth twice so much as the * swarme is: a swarm at *Cancer*, into a Hieve that containeth so much, and halfe so much: and for a swarme at *Mid-cancer*, a Hieve, that will hold it or little more, may suffice. The rest betweene these let be fitted in like proportion vnto these.

For example, a swarme of three gawns, or a † good Prime-swarme before *Mid-Gemini*, will aske a Hieve of three pecks: such a one at *Cancer*, a Hieve of five gawnes. Likewise a double-prime swarme comming betime, is fitted with a bushell-Hieve: and all pecke-swarmes, and other single

swarmes

43.
The Hiving of Bees.

43.
When they are to be hived.

* A Cone is a round Pyramid. *Figura rotunda ex lato in acutū definit*: and therefore is a Pine-*aple*, of his figure, called *Conus*.

44.
The token of their flying away after they be settled.

45.
How to fit the Hives to the swarmes.

May June

V. c. 3. n. 6.
P. n. 67. & 68.

swarmes after *Mid-Cancer*, with the least, or halfe-bushell-hiue. v. But little and late swarmes are rather to be vnited. v.

* The aire being sultry-hot, causeth the swarme to hang hollow; and so to seeme greater than heis.

† The goodnesse or greatnesse of a swarme you may most certaine lie know by the weight: it being a good one that weigheth five pound, a reasonable good one that weigheth foure, and a very good one that weigheth six. Heereby also it will not be difficult, which seemeth impossible, to know what number of Bees is in a swarme; if you know first that 4480. is a pound, because 280. weigheth one ounce, as 35. one dragme. So that two good swarmes vnited weighing 10. or 11. pound, doe containe betweene 40. and 50. M, the number of a *Campe-Royall*: which company cannot wel be larger vnder one Leader, in the largest Hiue. v. c. 3. n. 6. Of such a number did *Alexanders* victorious Army consist. For *Diod. Sic. l. 17.* reckoneth vp some 48. M. with those 13500. least behinde with *Antipater*. And *Iustin. l. 9.* not mentioning this company, numbrieth 36500. which number is also great enough for a very faire swarm; as containing the quantity of two reasonable swarmes vnited: there being also few single swarms so good, as to amount to 30000.

The weight of any swarme is to be knowne when the Bees are newly hived, and the number in any weight when they are newly taken.

If this iust proportion be not precisely kept, the Bees may doe well enough in a middle-sized hiue: for being vnder-hived, they will cast somewhat the sooner, though peradventure the lesse swarme; and being but a little ouer-hived, though they spend some time in supplying the former yeeres defects, they may yet swarme in good time, and the fairer swarme. And indeed all swarmes, whether bigger or lesse, by decreasing or increasing, doe naturally draw towards this quantity.

But if the disproportion be much, it must be amended; whether you spy your error the same day, or afterward.

If the same day, your remedy is to knocke out the Bees vpon the mantle betweene two single Rests, and to set a fitter Hiue ouer them: but this is not to be done before the swarming-houres be past, lest some of the Bees take a misse, and goe home againe. Otherwise you may set the Hiue in a Brake, v. with his bottome vppward, and the fitter Hiue vpon.

V. n. 24.

If afterward you see by the Bees lying out, that they are vnder-

and the Hiving of them.

C. 5.

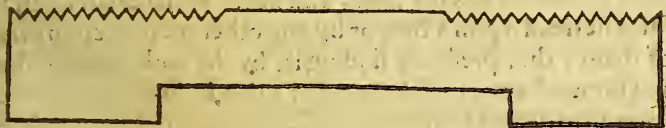
vnder-hiued, your remedy is to reare the Hiue with a skirt, or Bolsters, as much as will let them in. If at *Virgo* you see, by their not filling the Hiue, that they are ouer-hiued; your remedie is then to cut off the skirt vnto the combes, or neere to them.

But generally it is safer and more for your profit, to vnder-hiue a swarme, then to ouer-hiue him.

Your Hiue being fitted and dressed, v. you must haue also in a readinesse a Mantle, a Rest, and a Brush.

The Mantle may be a sheet, or halfe-sheet, or other linnen cloth, an ell square at the least.

A Rest is either single or double. The single Rest is a *Prisme* or three square *Column*, eightene inches long; and three inches deepe, hauing the vpper edge full of nicks for the space of six inches at each end, and the middle space, of six inches, smooth. It will be safer for the Bees, and lighter for cariage, if the length of tenne inches in the middle of the bottome be cut away one inch high, abating the new edges; and the foure inches at each end be hollowed in the middle of the bottome from end to end, at the same height of one inch: and so this will be the forme of the side,



And this of the end.

It is most fitlie made of a quarter of a young tree.



Vpon sheluing or hanging ground, one single Rest may serue: but if the ground be somewhat leuell, it is better to vse two: because the Hiue-skirt is set down vpon them with lesse danger to the Bees, then vpon the ground or other flat thing. And these two Rests are to be placed with the vpper edges about nine inches apart: so that the Hiue standing vpon them, may hang out ouer them some two or three inches.

M

In

46.

Better to vnder-hiue a stall them to ouer-hiue him.

V. l. 3. n. 8.

47.

Three things requisite to hiving.

48.

The Mantle.

49.

The single Rest.

V. n. 45. 56. 69.
V. n. 37.

In some cases two single Rests are most conuenient, v. but in most the double: v. which is also lighter for carriage, and more ready for vse.

50
The double Rest.

The double Rest consisteth of two parts or sides, an inch thicke, of the same length and depth with the single Rest, hauing such vpper edges so nickt at both ends, and the lower edges smooth, with ten inches of the middle cut away halfe an inch high, and then made sharpe againe: which two sides are to be fastned one to another, at the iust distance of nine inches from edge to edge, with two Rounds or Braces tennanted into them three or foure inches from the ends. These sides are fildy made of inch-board, or of a cleaft Lug of Withie or other wood.

51:
The Brush.

The Brush is a handfull of Rosemary, Hyssop, Fennell, or other herbes; of Hazell, Withie, Plum-tree, or other boughs; or rather of boughes with hearbs, bound taper-wise together.

52:
What the Hiuer
must doe.
V. c. l. n. 27.

All things necessary thus prepared, let the Hiuer, which must weare no offensive apparell, v. first drinke of the best beere, and wet his hands and face therewith: and then let him goe about his businellse soberly and gently, taking good heed where hee sets his foot, and how hee handleth them: for if he tread vpon a Bee, or by any other meanes crush one of them; they presently finding it, by the ranke smell of the poysonous humor, will be so angry; that he shall haue worke enough to defend himselfe, vnlesse hee haue on his complete harnessse: v. and being thus disquieted they will be the worse to hiue. Moreouer, the troubling of them doth oft times make them rise and goe home againe: sometime it breaketh the swarme, causing part to returne, whereby the rest are discouraged, being least vn sufficient: yea sometime it disperseth and spoyleth the whole swarme: it may be also the death of the Queene: and then they will not continue to the next Summer, howsoever provided. And experience hath taught me, that few swarmes much troubled in the hiuing do prosper. And therefore in any case Hiue them as quietly, and with as little businellse as you may.

53.
The manner of
Hiuing.

The manner of hiuing is so manifold, by reason of the
many

and the *Hiving* of them.

C. 5.

many & different circumstances of the lighting or pitching places, that it can hardly be taught by precepts; but is rather to be learned by use and experience, guided with reason and discretion. Neuertheless for the helpe of novices, I will set downe some speciall directions, which he that marketh, may readily hieve a swarme in most lighting places: and a little practise will fit him for any.

First therefore note that a swarme is to be hived by 1. shaking, or 2. cutting the bough whereon it hangeth; or by 3. wiping the Bees down, or 4. driuing them vp into the Hiue.

If your swarme light vpon a bough; first spread the Mantle vnder it, and lay the Rest or Rests in the middle thereof, with the ends toward two corners of the Mantle.

Then if the swarme be so high, that you or some assistant may conueniently put the Hiue vnder it; hauing first removed the twigs round about, that stand in your way, shake the Bees into the Hiue: and when you haue set the Hiue right vpon the Rests, take vp the two corners of the Mantle at the ends of the Rests, and pinne them together vpon the top of the Hiue, to stay the Bees running out sodainely: and then returning to the bough, shake it againe, and turne it aside out of his place, or couer it with your body, or with some cloth: and then presently loose the corners of the Mantle, and spread them againe. When they begin to cease running into the Hiue, if you see them lie thicke vpon the Mantle, shake them to the Hiue-skirts: and the rest, as well vpon the Hiue as the Mantle, driue in gently with your Brush. So shall you easily and quietly Hieve them. Otherwise hauing first taken away the twigs that may let you, cut off the bough or boughes (for sometime they wil hang vpon many): and if you doubt that some of them may fall in the cutting, let another second you with the ready Hiue, holding it directly vnder them. The bough being cut, lay the *Cone* betweene two single Rests, and set the Hiue ouer them. Or else put the *Cone* first in the Hiue, and then set the Hiue downe vpon the Rests.

But if they hang so neere the ground, that you cannot conueniently put the Hiue vnder them; then placing the

M 2

Mantle

54.

*Four meanes
of Hiving a
Swarme.*

55.

*How to Hieve a
Swarme that
lighteth vpon a
bough.*

56.

Either high.

57.

Or low.

Mantle and Rests right vnder, shake them downe: and setting the Hiue ouer them vpon the Rests, take vp the two corners of the Mantle, and doe as before.

And in case some of the swarme be first fallen to the ground, whence they make no haste to rise againe; then, placing a double Rest without a Mantle as well as you may, not killing any Bees, either shake the rest downe to them, and so set the Hiue ouer them all, or else set the Hiue ouer that part, and the rest, hauing cut the bough, lay beside the Hiue, and moue them with your Brush.

38.

*How if it light
vpon a high tree.*

If they pitch vpon a high tree, it is not best to shake them into the Hiue, but rather with a sharpe knife cut the bough if you can conveniently: and either put it into the Hiue, and couer it with a Mantle, or bring it downe gentlie in your hand. But if you want a ladder or other meanes to bring it downe, then let it downe by a cord tied to some crooke of the bough.

39.

*How if vpon the
body of a tree.*

If they pitch vpon the body of a tree, or vpon some great harme; then set one side of the Hiue right ouer the Bees, and with the Brush driue them vp by mouing still the lower and wayward part. But if you haue no meanes to fasten the Hiue by tying it aboue, or propping it beneath with prongs or the like, or if they be vnwilling thus to take the Hiue; then parting them from the tree with a tight v. thred, wipe them downe into the hiue, and set them vpon the Mantle & Rest vnder the tree. If they be so high that you must clime for them, then couer them presently with a Mantle, and so carry them downe. But looke that many will rise againe: which let alone vntill they be knit, and then sweepe them likewise into another leere Hiue, and put them to their fellows. If yet some of them will vp againe, you must not cease to trouble them, by wiping them off gently with your Brush, by laying on Mug-wort, Margerom, Wormewood, Archangell, or other Weeds, or Hearbs, or by couering the place with a cloth: and after a while they will all to their fellows in the Hiue.

7. n. 23.

** White Nettle.*

But if they be so neere the ground, that you cannot conveniently put the Hiue vnder them; then with a tight thred sweep

and the *Fluing* of them.

C. 5.

sweep them downe vpon the ground ; hauing first layed the Rest either with or without the Mantle, and set the Hiue ouer them.

And if they be of that distance from the ground, that you may set a stoole close vnder them ; then make fast one side of the Mantle vnto the tree, close vnder the Bees, and the rest of the Mantle lay vpon the stoole with the Rest : then hauing sodainly swept downe the Bees vpon the Mantle, set the hiue ouer them : and presently loosing that side of the Mantle from the tree, lay it ouer the Bees close to the Hiue.

If they light on the top of a stub, pollard, dead hedge, or the like, set one side of the Hiue ouer them, propping the other side with a prong or two, and driue them vp as before.

60.
*How if it light
vpon the top of
any thing.*

If they light in the middle or bottome of a dead hedge, your best way is softly to vnworke the hedge till you come to them : otherwise you must violently knocke the hedge on the other side, so forcing the Bees into the Hiue : and then setting them downe, trouble the place as before. But then be sure to be troubled your selfe: for it is hard so to get them from such a hold.

61.
*How if it light
in the middle of a
dead hedge.*

If they light on some hollow side of a stub or tree, which they will be loth to leaue ; beware in any case you wet them not : for that doth not onely drowne many, but also maketh the rest more eagerly keepe the place : because some through the wet cannot flie away, and their fellowes finding them there will still resort vnto them. But when you haue moued them by other meanes as much as you may, put some mortar or cloome into the hollow place, mouing it forward by little and little, so that you burie none of the Bees, vntill you haue spread it ouer the place: and then will they forsake that, and take some other part of the tree or stub, where you may more easily hiue them.

62.
*How if it light
on some hollow
side of a stub, or
tree.*

When they flie into a hollow tree, so that by none of the foresaid meanes you can hiue them, then must you remoue them by some offensive smoake, and make them chuse a new lighting place : which is thus to be done. If the Bees lye aboue the hole where they went in (as they will doe if they may) then boare a hole aboue them : if beneath,

63.
*How if it flie in
to a hollow tree.*

them : but bee sure that the vpper hole bee wide enough : rather then faile make two or three with a two-inch auger, or, with a hatchet, one as great. Then fire a peece of Match, or for want of Match, take a little Hay, or other thing that will smoake moderately, and not flame ; and put it into the tree beneath them : and you shall see them fly forth about for life, and presently pitch in some place where you may hieue them. But this is to be done the same or the next day at the farthest : for afterward they will abide the smother, and rather lose their liues then leaue their goods.

64.
*How if I light
vpon another
hiue.*

65.
*The swarme is
alwaies to bee
kept together,
lest the Bees kill
one another.*

If a swarme by reason of the coldnesse of the aire, and roughnesse of the wind being not able to get away, do offer to light vpon any other Hiue ; quickly couer the Hiue close with a Mantle, lest the Bees entring be pittifully murdered.

But in all manner hiuings this one rule is generall. The swarme must bee continually kept together : for if at that time part remaine from the company but the space of halfe an houre or lesse ; afterward when they finde them, and would returne vnto them, they are vsed as Strangers and Robbers : as fast as they come they are beaten and killed. And those that escaping thence goe backe to their old home, finde no better entertainment : and those few that escape thence, desperately runne into any other Hiues, and so leape out of the Frying-pan into the fire. And therefore when the swarme is hieued, if you see part begin to gather together by themselves ; remoue them as speedily as you can, that they may goe to their fellowes in time.

66
*The swarme to be
set neere the
lighting-place.*

And alwaies if you may chuse, set the swarme in the morning Sunne, and as neere the lighting-place as may be : which if some inconuenience will not suffer you to doe, yet set it within the length of a Pearch, or at the least within sight and hearing : and then (lest those which are least at the lighting place, by losing their company a while, lose their liues also) first trouble them by the meanes mentioned n. 59. and then cause some of the hieued part to arise by shaking them off the bough, and by wiping them downe that are on the out-side of the Hiue. Which, when they are vp, will make such a noise, that their fellowes may easily finde them. And if

if any yet hankering behinde chance to be set vpon when they come to the Hiue; be-sprinkle the Mante, the Hiue, and the Bees with a little strong drinke, and you shall part the fray.

And if any man maruaile why they of the same swarme should so soone be strange one to an other, seeing that Bees of one Hiue being pent a whole day in an other, are yet welcome to their fellowes at the last; I can giue no other reason but this, that they knowing a swarme may part, and so each part become a seuerall company, they deeme these to be such by their long absence. And if you aske why they should finde so hard entertainment in their old home from whence they came, it is because they went away with a Leader of their owne, and so became a seuerall company. And therefore if she bide away, as many as come backe, (vnlesse they come presently) are vsed as strangers: but if part haue brought hir home againe, the rest doe safely returne afterward, either that euening, or the next morrow.

If the swarme part, as sometime it will, and settle in diuers places so neere that they may see each other; let the greatest part alone, specially if it bee best to hiue, and trouble the other in the settling with shaking, gentle rubbing with weeds, and spitting and blowing in the place, that they may goe to their fellowes. If they bee settled and hang vpon a bough, cut the bough and bring them to them. If they bee settled in some other place, then put them in a hiue without Spleers: and if they be within a pearch of the other part, moue them both, one towards an other by little and little till they be close together. After they haue stood so about halfe an houre, lift vp the spleered hiue from his Mante and Rest, and shake the Bees out of the vnspleeted hiue vpon the same: you may first knocke the hiue downe, and then presently clap it twice or thrice betweene your hands. This done, sprinkle both parts with good drinke, and then without any stay set the spleeted hiue ouer them, and they will straight way vp into it. But lay the vnspleeted hiue along hard by, not where it stood, but on the other side: and those that remaine in it will follow their fellowes. But if the parts be

67.

*What to doe if a
swarme part.*

be farther a-part then a Pearch; then put them together the same night, as if they were two swarmes. v. n. 69.

In like manner, when you haue little swarmes vnder the quantitie of a Pecke, specially after *Cancer* is well entred; put two or three of * them together, whether they rise in the same day, or in diuers.

* After this time, the chiefe breeding being past, the swarmes desire most to vnite themselves, that thereby they may make their company sufficient: which by breeding they haue not time to doe.

68.

*Uniting of
swarmes is profit-
table.*

For being thus vnited they will labour cheerefully, gather store of wealth, and stoutly defend themselves against all enemies: whereas if they were kept asunder, they would surely perish the next robbing-time, or winter; or liuing would doe you little good. And therefore if two swarmes rising at the same time do weld and knit together; (as lightly they will doe, if they be within hearing one of another) neuer trouble your selfe to part them, nor be sorrie for the chance. For those two being all one, are better then three such that are alone. Indeed sometime it falleth out, that they fall out, and fight at the first: but that is because they are yet diuers companies vnder diuers Commanders. For so soone as the inferior being taken away, there remaineth one supreme Monarch ouer all; the strife presently ceaseth, and they are thence-forth linked in perpetuall peace and vnited together. Wherefore they are little acquainted with the nature of these politike creatures, that fetch their similitudes from them, to crosse that Rich, Mightie, Renowned, thrice happy VNI ON, vnder one Prudent, Potent, Peacefull, thrice Noble Soueraigne.

69.

*The manner of
uniting.*

The way to vnite two swarmes is this. In the euening some two or three houres after Sunne-set, or when it waxeth darke, hauing spread a Mante on the ground, neere vnto the stoole, where this vnited swarme shall stand, and set a paire of Rests in the middle of it; knock downe the Remouer vpon the Rests, and then lifting vp the Hiue a little, and clapping it betweene your hands to get out the Bees that sticke in it, lay it downe on his side warily by the Bees, and set the

Receiuer

Receiver vpon the Rests ouer them : and they will begin presently to ascend. If those that remaine doe not runne out to their company, of their owne accord ; clap the place where they be gathered, and force them out: and lay downe the hiue againe so, that the small remnant may follow their fellows: if you spy any clustering by themselves, or stragling from the Rests, guide them thither. And when they are all in, either that night, or betimes in the morning, cloome the Hiue vnto his stoole.

Otherwise about ten a clocke, or as soone as it is darke, set the *Remouer* in a Brake v: with his bottome vpwrd, and the *Receiver* vpon him, binding them about the skirts with a long Towell or two Napkins sowed or pinned together, and so let them stand till the morning : and then set the *Receiver* vpon his stoole. After this manner I vnited two swarmes without the death of any one Bee, sauing onely her that must not be saued.

If yet there be not Bees enough in the Hiue, you may in like manner put another swarme to them.

In the vniting of swarmes, two speciall inconueniences are to be auoided. The one that being vnited, they exceed not the naturall quantitie of a swarme: v. for if they doe, though they agree and gather, and grow fat, yea and cast the next yeare a faire swarme ; yet will they neuer come to their first quantitie againe, nor scarse swarme any more in that vast roome. The other that they fight nor, and destroy one an other. Vnto which two inconueniences the swarmes that vnite themselves, if they be not aided, are obnoxious. To preuent the fruitlesse concourse of more then need is, which is the first inconuenience, when you see a sufficient faire swarme abroad, haue an eye vnto the rest of your stockes : if you espie an other about to rise, stay him by present shutting the doore with a Napkin, Apron, or other such cloth, vntill the first swarme be sealed : if then one rising draw neere vnto him (as lightly he will doe if he can finde him) couer him quickly with a Mantle till that be sealed : if being now hiued, an other presse into him ; then before many be entred, (that you may be sure not to haue the *Queene*)

N carrie

70.
Another way.
V. n. 24.

71.
Two speciall inconueniences to be auoided in this worke.

72.
1. Superfluous multitude.
V. c. 3. n. 6.

73.
2. Ciuill warre.

74.
To preuent the first.

carrie away the Hiue with the swarme about two pearches off : and set a leere prepared Hiue in his place for that other swarme.

If none of these things bee done, but that swarmes doe runne together in greater quantitie than a good Hiue can containe ; then reare the Hiue with bolsters high enough to let them all in : which, when they haue once swarmed, the * next Vindemie take away thus.

* If you doe it in Winter, see the Bees be not chilled.

In a faire afternoone, about foure a clocke, picke away all the cloome betweene the hiue and the stoole : and in the morning, at the breake of the day, lay the Hiue along with the edges of the Combes vp and downe, vpon a Mantle spread on the ground : and there pare off the Combes ends euen with the skirts, and so set him againe on the Stoole vpon moueable v: Doore-posts, and a thin bolster behinde : and presently clome vp the Hiue as close as may be.

V. 6. 3. 2. 29.

75

To preuent the
second.

Concerning the other inconuenience, know this, that though two strange swarmes, with their seuerall Queenes, doe neuer meet in one Hiue without discontent ; (which they expresse by running to and fro without, and making a tumultuous noise within : from which they sometime fall to fighting and killing) yet commonly this strife is soone at an end. For the first Queene hauing gotten the right of the whole Roome by the possession of the Capitol or Superior part, where she sitteth safe with hir Guard about her ; the Inferior by a common consent, is straight-way dispatched : and so they become all fellowes and friends vnder one Soueraigne. And therefore when swarmes are vnited by you, be sure that the Bees in the *Receiuer* be not throwne downe among the other, lest the Superior Queene come downe with them, and so you make more strife than needs.

76.

When most danger is.

But the danger is when two Princes with their equall Colonies happen to be equally aduanced in the Hiue : and therefore neither yeeldeth to other, but fight it out on both sides with equall hope of victorie. When this chanceth, which is very seldome, the Controuersie is doubtfull ; and the conflict like to be perillous, or rather pernicious, if it be

not

I had espied about a handfull of Bees hanging vpon a Nettle on the ground: among which was the Prince. When I had cut off the Nettle, and set it by the Rest vnder the Hiues-kirt; presently the knot vnknitting, I saw the lost Prince with his long traine stately walking into the Hiue. As soone as hee was entred, these Male-contents began to stand still and buzze, ioyfully shaking their wings, as they wont to doe when they are pleased; and so quietly kept the Hiue. To see the suddaine alteration among them presently vpon his approach, and how they could haue notice of it all at once, as well they without, as those within, would euen make a man to wonder; but that indeed all they doe is nothing else but wonders.

79.

*How to stay
them.*

Swarmes that goe home, doe sometimes stay long before they rise againe: and when they rise (specially if they were hived) they are likely to fly away: although I haue knowne a swarme to rise foure times in three daies, and at the last to be quietly hived. If therefore you perceiue the swarme returning before many be entred the old stocke, shut the doore fast: if that will not serue the turne, carrie the old stocke away stoole and all, and set the swarme presently vpon a stoole in his place.

80.

*How to keepe
them from other
Hives.*

P. c. 2. n. 17.

And if any of them begoing into other Hiues, (as sometimes, where the Hiues stand neere together or are many, some of them, specially the young Nymphs that haue not bene abroad before, will doe; v.) cover them with Mantles: for as many as enter will die, or scape narrowly.

81.

*Set not a swarme
neere an others
hiving-place.*

If a swarme light neere the place where another was hived a day or two before; be sure to set it as farre as conueniently you may, from the place where the former lighted and stood: the space of a Peach or somewhat lesse may suffice: otherwise many of the first swarme resorting thither, will to the new swarme, and so be killed.

82.

*What to do when
the swarme is
new hived.*

When your Bees are hived, those that hang on the outside, driue in gently with your Brush, and lay the corners of the Mantle that are farthest from the Rest, ouer the Hiue, with boughes also to shadow it, if the weather be hot. But if you finde them vnwilling to goe in (as in extreme hot weather

weather they will be, though they like the Hiue well enough) then strue not with them; but laying the corners of the Mantle ouer the Hiue, as before, with boughes to shade it, there suffer them till the heat be abated, and then driue them in: and if you thinke they cannot otherwise well endure that heat, couer the Hiue againe with Mantle and Boughs. And so let it stand till it wax darke, and all the Bees be come home.

Then knitting the foure corners of the Mantle together, at the top of the Hiue, and binding the Mantle about close to the middle of the hiue with a small line, carrie the swarme to his place. And after a while, taking away the Mantle, set it vpon his seat with the doore toward the South, or rather South-west: v. and then leauing onely a breathing place, for feare of stifling them, cloome it vp close, & put on a hackle v. and so let it stand till it be faire and warme the next day. For if the Hiue be leaft open; in the morning betimes they will resort to their former standing and there abide, sometime flying about, sometime setting on the ground: where if the cold or wet take them many dye. When you see the weather fit them, then hanging the Mantle, or other white cloth vpon the Hiue, let the go. But they will the sooner leaue the haunt of their huiing-place, & fal to their work; if you shew them their new standing by knocking them out together vpon the stoole, when the weather is warme.

All swarimes, if the morrow be faire, will desire to be abroad betimes: and knowing their want, will bestirre themselves more lustily in their labour than other Bees. But if the foule weather keepe them in the first day, then are they much discouraged: so that the next day being indifferent, when other Bees worke hard, they will scarce looke out of the doore, not daring to commit their leere and thinne bodies to the could aire. And if they be quite kept in the second day also; then will they not wagge (though they dye for it) vntill the weather be very pleasant. They may liue five or six daies in the Hiue without Honie: but afterward they begin to string downe, hanging one at anothers heeles.

Pedibus connexa ad limina pendet. Which is a certaine signe

83.
*How to remove
it in the eue-
ning.*

84.
*How to set it on
his seat.*
V. c. 2. n. 15.

V. c. 3. n. 15.
Or 20. c.

85.
*How to use it in
the morning.*

86.
*Foule weather
the first day
doubt much dis-
courage a swarme.*

87.
*Foule weather
continuing doubt
wicken a swarme
and die.*

88.
*A swarm may
liue six daies
without Honie.*
Virg.

89.

*How to prevent
the drouping and
death of a
swarme.*

V. c. 9. n. 2.

90.

*How to cure a
drouping swarm.*

of death, if they be not presently relieved.

To prevent this euill, If the swarme light in your Garden within a Pearch of the Seat that is appointed for him, set it there at the first: and so will they lose no time in hankering about the hiving-place. And if it light farther off; (whether in your garden or other place where they may stand safe, specially the weather being vnkinde or vnconstant) leaue them there till it mend: & for those that are not remoued, but keepe still their first standing, because they are not to seeke of their way home, they feare the foule weather as little as the best. And therefore need not to be shut in in the morning, as those that are remoued: or to haue any white ouer them for their direction.

The meanes to recouer such a drouping swarme is this. The first Sunne-shinie day turne vpon the Hiue to the Sunne, that his heat may reuiue them: and besprinkling the sides of the Hiue, the Spleets, and the Bees also a little with Mede or Honie-water; hold them so in the heat of the Sunne till you see many of them fly abroad. Then set downe the Hiue gently vpon his Seat againe, and couer it not till it be through warme, and the Bees play cheerefully, as at other Hiues.



CHAP. VI.

Of the Bees Worke.

1.

Bees most industrious creatures.



Nto the industrious nature of Bees nothing is more odious than sloth and idlenesse: while there is matter to worke vpon (vnlesse they be let by vnkinde weather) their worke neuer ceaseth: yea the old Bees, which haue spent their daies in continuall labour, will not at the last allow themselves any immunitie or rest in their Hiues, as a recompence for

Of the Bees Worke.

C.6.

97

for their paines past, but continue still their trauaile vnto death: v. In the three still moneths indeed, *Sagittarius*, *Capricornus*, and *Aquarius*, because then there is nothing to gather, they worke not: (yet when a faire day or houre cometh, as wearie of rest, they will abroad, imploying themselves in diuers necessarie offices: v.) but so long as any good flowers grow, euen from *Pisces* or a little before, vnto *Sagittarius* and, some yeares, somewhat after, (which is full nine moneths) they lose no time, (*Nullus, dum per cælum licuit, perit dies*) but follow their businesse tooth and naile. Which incessant labour while the time permitteth, with the three singular effects thereof, the (1) working of Wax, the (2) making of Honie, and the (3) feeding of their young v: the Poet in few words hath elegantly expressed all together.

*Quod superest, ubi pulsam hyemem sol aureus egit
Sub terras, cælumq; æstiva luce reclusit;*

*Ille continuo salus silvasq; peragrant,
Purpureosq; metunt flores & flumina libant
Summa leues. Hinc nescio qua dulcedine læta*

(3.) *Progeniem nidosq; fouent: hinc arte recentes*

Excudent (1.) ceras: & (2.) mella tenacia fingunt.

Their first worke is the ground of the other two, the Artificial Cells seruing both for Coffers to lay their sweet treasure in and for neasts and nurseries to breed their young in. The matter thereof they gather from flowers with their Fangs: which, being kept soft with the heat of their little bodies, & the Aire, and of their Hiues, is wrought into Comb. This worke is so nimble and closely done, that it can hardly be perceiued: insomuch that *Aristotle* plainly confesseth, *Nec vero quemadmodum operantur visum adhibet est*. But *Plinie*. willing to goe a little beyond him, telleth via tale of a Lanthorne-hiue made at *Rome*, through which, stfooth, their doings in the Hiue were discried: and in another place of another like deuice. *Multi alvearia speculari lapide fecere, ut operantes intus spectarent*. But vnlesse the Bees also were transparent as well as the Hiue, this cannot be: seeing they doe alwaies frequently compasse the Combs round

November.
P. c. i. n. 58. 2 December.
2. 3 January.

In three moneths they cannot worke.

V. c. 3. n. 60. 61. *Pisces.*

3.
All the yeare after they lose no time.

Nat. hist. li. 11. cap. 6.

4.
Three fruits of Bees labour.

V. n. 53.
Virg.

5.
The first, and ground of all, is Wax.

← 6. *wax gathered from flowers.*
How Wax is gathered and wrought.

Hist. l. 9. c. 40.

Nat. hist. li. 17. c. 16.

Nat. hist. li. 21. c. 14.

Hive with C. 6.

A side-door →

Conjoined heat of Bees
and Drones hatches
the Brood.

7.

How you may see
the working of
the combs.

May

Wax softened in →
the mouth of Bees.

8.

How much wax
they bring at
once.

White Scales of Wax.

9.

The admirable
Architecture of
their combs and
cells.

Hexamer. l. 5.
C. 21.

Of the Bees Worke.


round about. A more likely way than that, were to haue a moueable peece in one side of the Hive: which when you haue taken away, you may see the Drones and the Hony-Bees walking together to and fro, and with their doubled heat hatching their young: but their worke can you not see; though you remoue and part the Bees till the bare Combes appeare. But if your curiositie would so faine behold the manner of their curious and artificiall building, the onely way is this. In *Gemini* set vp a last yeeres midling swarme two or three handfulls about the stoole: and then when most of the Bees are abroad (but most fitly in the forenoone when they are most quiet) you may behinde the stoole behold them working on the edges of their combes: and hauing blowne their liquid and soft wax out of their mouthes (as the Wasps doe their drossie stuffe, which you may see them gather from pales with their fangs and so carry it away) to fasten and fashion it with their fangs and forefeet.

How much wax they bring at once, doth appeare by the new swarmes: whose first weekes worke is spent chiefly in building combes: wherein they are so earnest, that it falleth out with them as it is in the Prouerbe, *Themore haste the worse speed*. For many of their burdens doe fall from them before they can fasten them to the Combes. You may then see great store of them vpon the stoole by the skirts of the hiue, like vnto the white scales, which fall from young birds feathers. And therefore some haue imagined, that they also are scales which the young Bees doe likewise shed from their wings. But put you some of those parcells together with warme fingers, & you will quickly be resolued of that doubt.

The Bees combes are placed otherwise than the Wasps: for the Wasps hang theirs one vnder another, and the Bees theirs one beside another; beginning them in the top of the hiue, at that distace that a Bee may reach frō one to another.

Their cells or little holes are made six square, according to the number of their feet: and of that length and widenesse, that each of them may easily containe a Bee. Which are so artificiallie wrought and ioyned together, that *S. Ambrose* in the consideration thereof saith, *Qua castra quadrata tantum possunt*

possunt habere artis & gratia, quantum habent crates favorum, in quibus minuta ac rotunda cellula connexione sui invicem fulciuntur? Quis enim architectus eas docuit hexagonia illa cellarum indiscreta laterum aequalitate componere, ac tenues inter domorum septa ceras suspendere, stipare mella, intexta floribus horrea nectare quodam distendere?

But heerein their Art is yet more exquisite, that whereas there are two courses of cells in the two sides of every comb; the cell-bottoms in these two sides are never opposite one to another: but each hexagonal bottom of one side answereth to three third parts of the hexagonal bases of three contiguous cells on the other side, meeting all in one angle right in the centre of the opposite bottome: as in this forme:  which is so artificiall, as well for strength as beauty; that no shadow, though the thin bottome of his cell should faile, can breake through into a cell of the other side. Hee that sees this, sees he not a wonder?

Besides these ordinary combs, there is commonly one Drone-combe in a hiue, wherein the Cephens are bred, made for the nonce with wider cells. *Sunt loculi ipsi fucorum ampliores, & singuntur seorsim quoq; per se favi fucorum.* Although in some hiues part of the Drone-combes be made out with Nymph-cells. The Drone-combe being no thicker than others, and yet the Drones longer than the small Bees; they increase the length of his cells by covering them, not with a flat couer, as they doe the rest, but with a deepe hollow one like an old wiues thrumbd cap: which afterward, when the Drones are bred, they take away. And when those cells are void of Cephens, they fill them as they doe the other with hony: yea and after swarming-time, if they want vpper cells for their hony, they will not tarry till their Cephens come forth themselves, but liking better their roome than their company, they draw them out of their seminaries before they be ripe. v.c. 4. n. 31.

10.
The Drones
combs.
Hist. 9. c. 40.

But the Queenes cells are built single, every one by himselfe: and that in diuers places of the Hiue, some aboue, and some beneath: that, as other princes, she may for her delight remoue at hir pleasure. But, for the most part, in the out-sides

11.
The Queenes cells
are built single
in diuers places.

12.
In fashion
round.

P. c. 4. n. 18.
Nat. hist. li. 11.
c. 11.

13.
The common er-
ror anent these
celles.

14.
The combes dee
often change
their hinc.

Virgin wax
and ordinary.

15.
Wax is gathered
onely in foure
moneths.

16.
Hony the second
fruit is gathered
in 9. moneths.

P. c. 3. n. 59.

17.
Two sorts of
Hony.

of the combes: for although it be fit for Princes to be neere their chiefe Cities; yet doe they not loue to be pestered in the midst of them. In fashion they are round: which is the most perfect figure, as the six square is most fit for comely ioyning many such buildings together. They are also larger than the rest: to shew that subiects houses should not match their Soueraignes in greatnesse. In these Palaces do they breed their young Princes. v. *Pliny* speaketh thus of them: *Regias imperatoribus extruunt amplas, magnificas, separatas, tuberculo eminentes.* The common people, finding them alwaies in those stalls that die, take them for certaine signes of death, and call them pipes, or taps: and therefore when they see them in a stall that they take, they say, This was taken in good time, for it is piped: and therefore would haue stood no longer. But seeing none are without, no not the yongest swarms; ordinary reason might teach them to forgoe that fond conceipt.

The Combes haue successiue sundry colours: white, yellow, browne, blacke. Their first colour white, by the end of Summer is turned to a light yellow. Those that are taken and tried this first yeere, are called Virgin-wax, but the whiter the purer: and the rest are ordinarie. The second Summer this light yellow is changed to a sad. The third this sad yellow into a browne: which afterward, as they wax old and corrupt, altereth againe into a blackish and durtie colour: but these being tried will returne to yellow.

The time when Bees gather wax, is onely betweene *Taurus* and *Virgo*: (vnlesse *Aries* be milde and warme:) for then they may begin in that month.

BVt Hony they gather all the yeere: saue onely in those 3. *Still* moneths, when the weather keepeth in both Bees and flowers. v. And it is of two sorts: the one pure and liquid, which is called *Nectar*, the other grosse and solid, which we may by like reason tearme *Ambrosia*. For both serue for the food of these diuine creatures.

* Yea rather this is the true *Nectar* & *Ambrosia* wherewith *Iupiter* was first nourished in the Ile of *Crete*, v. c. 4. n. 6. while the *Curetes* hid him frō *Saturn*. Which gaue occasion to the Poets of this fiction, that the Bees were his nurses.

April.
to
August

nutes. *Dicteu celi regem parere sub anro. Virg. Geor. 4.* And afterward, when they would make him immortal; because of the long-preteruing vertue that hony hath, (v. c. 10. par. 3. n. 1.) they fained it to be his immortall food. *Iupiter Ambrosia satur est & neclare vivit. Mars. l. 11. Ep. 58.*

The grosse hony is gathered by their fangs : from whence it is conueied by the fore-legs to the thighes of the hin-legs. (*Que flores comportant prioribus pedibus fœmina onerant propter id natura scabra, pedes priores rostro : totaq; onusta remeant sarcina pandata*) and that so nimbly, that vnlesse you haue a quicke eie, you can scarce perceiue it.

This worke may best be seene in the spring, when they gather vpon the blackthorne : for then by reason of the cold they are not so quicke.

When they haue brought these burdens home ; they vnload them into the dry cells for the young to feed on, which are not yet able to flie abroad. And in the beginning and ending of the yeere, looke what they saue when the weather is faire, they lay vp for themselves against a rainy day. Which, while it is good, they will feed on, to saue their *Nectar* as much as may bee. But this kinde of hony is like vnto fresh fish : it must not long be kept. For if being laid vp in the cells, by reason of plenty that comes in fresh and fresh, it lye vnspent ; after a while it corrupteth, and of sweet becommeth the sowrest and the most vnauory of all things both to taste and smell : which then they commonly call Stopping or Coome. Where there is any store of this stuffe, it doth so offend the Bees, that oft times it maketh them to forsake all. Most of them will that yeere goeforth in swarmes : and those few that are least will neuer prosper.

Anent this legg-stuffe or grosse hony there is a generall error. For, without all scruple or doubtr, men doe count it and call it wax : (as did some also in time of old, whose opinion Aristotle doth thus deliuer: *Ceram apes perreptando flores capiunt priorum acumine pedum : mox priores in medios abstergunt. & medios in blasaposteriorum.*) But against (as I shall shew you) both sense and reason.

If you put it to your tongue, it hath the taste of hony : which wax hath not. If you feele it betweene your warme

18. *Grosse Hony.*
Farina
How Ambrosia or grosse hony is gathered. *of Flowers*
so called.
Nat. hist. l. 11. c. 10.

19. *Ambrosia, is the*
Schadons food, as
water their
drinke.

20. *Being kept it is*
soone corrupted.

21. *And then becom-*
meth most vn-
auory stopping.

22. *Much stopping*
maketh the Bees
forsake their
hives.

23. *This Ambrosia*
is commonly ta-
ken for wax.
Hist. l. 9. 40. x

24. *Which error is*
disproved by
sense.

Bees by creeping vpon & flowers collect it away with the claws of their fore feet, then give it to the middle feet and the latter carrying it to the patches (or receptacles) of the hind feet.

P. n. 14.

Real wax

25.

And reasons.

Time: Apr. Vir. Aug.

fingers, it müttereth apart: where wax sticketh fast together. If you put it to the fire, it meltech not, as wax doth. And whereas wax is all of one colour, i. white at the first, v. euen as those little fallings of the new swarmes; (which is wax indeed) this leg-honie is of diuers colours, white, blacke, yellow, Greene, red, tawny, orange, murry, and of sundry midling colours. Therefore sense doth say it is no wax.

The reasons are two. The first is, because when they gather abundance of this stuffe, they haue neuer the more wax. The other because when they make most wax, they gather none of this.

For prooffe of the first, All the Bees betweene *Virgo* and *Taurus* doe gather abundance of it: and yet are not their combes in this time any whit enlarged. Also one of those old stalls that are full of combes, doth carry more of this matter all the summer long than many swarmes: and yet haue they no more wax at the end of the yeere than at the beginning.

For prooffe of the other, The new swarmes within one weeke, if the weather serue them, will haue halfe filled their hives with combes: and yet in all this space shall you scarce see one carry any of this. If you would know the reason why the stocks gather so much, and the new swarmes so little; it is because the stocks haue *schadons* which they feed with it, and the new swarmes haue none. And if any foolish Bee doe carry in *Ambrosia*, it is put in a dry cell where it turneth to Stopping, v. as I haue seene within a fortnight after the huiuing.

P. n. 21.

26

And by ambrosia.

Nat. hist. l. 11. c. 7.

P. n. 27.

Hist. l. 9. c. 40.

And this, though 'now it seeme new, yet was it knowne many ages agoe. *Plinie* writeth of it thus: *Prater hac (i. prater ceram & nectar) conuehitur erithace, quam aliqui sandaracham, alij cerinthum vocant. Hic erit apum dum operantur cibus: qui sepe inuenitur in fauorum inanitatibus sepositus; & ipse amari saporis.* Speaking in the last words of that which is corrupted v. And before him *Aristotle* himselfe thus: *Mel apibus tum astate tum hyeme cibo est: sed recondunt alterum quoq; cibarii genus, cui durities cera proxima, quod sandaracham nonnulli appellant.*

Of the Bees Worke.

C. 6.

The *Nectar* or liquid hony the Bees gather with their tongues, whence they let it downe into their bottles, which are within them like vnto bladders: each of them will hold a drop at once. You may see their little bellies strut withall. Men thinke, because they see nothing on their legs, that they come in leere: when they are better and more heavily laden than the other. These bottles, as soone as they come home, they empty into their combes. *Mel ore evomunt in cellas.* This *Nectar*, being cleere as Crystall at the first and liquid as water, when it is two or three yeeres old, becometh white and hard. *Concresecit autem mel concoctum jam tempore: initio enim, ut aqua, dilutum est, & primis diebus sine crassitudine cernitur.* While it continueth liquid, and will runne of it selfe, it is called liue-hony: when it is turned white and hard (euen like vnto sugar) it is called corn-hony, or stone-hony.

27.
How the pure Nectar is gathered.

Hist. an. li. 5. c. 22.
Hist. an. li. 5. c. 22.

28.
Two sorts of Nectar.
Liue-hony and stone-hony.

And the liue-hony is of two sorts: that which is gathered by a swarme, cleere and crystalline at the first, v. layd vp in virgin-wax, v. and taken the same yeere, is the right virgin-honie: the other, which is yellow and thicker, gathered by an old stall, and therefore kept in corrupter cells with drosse and courser hony, is called ordinary.

29.
Liue-hony of two sorts.
Virgin-hony.
P. c. 10. p. 2. n. 13.
V. n. 14.

The first shoot whereof (specially in a plentifull yeere of *Nectar-dewes*) running thence of it selfe, is a kinde of virgin-hony, v. and little inferiour to the right.

30.
The finest ordinary is a kinde of Virgin-hony.
P. c. 10. p. 2. n. 6.

Nectar, whether it be ordinary or virgin-hony, is either finer or courser, according as the soile is where it is gathered: v. For the best countries, which yeeld the best wheat and the best wooll, yeeld also the best hony. And therefore the wood-lands of Hampshire haue better honie than the heath, and the champion or field country, better than the wood-lands. The reason is, because where the flowers are most fragrant and vertuous, as well of the fields as gardens, in the purest and sweetest aire; there the honi-dewes, which are extracted from them, are most fine and pure, v. n. 40.

31.
All hony, courser or finer, according to the soile.
P. c. 10. p. 2. n. 12.

When the cells are full, they close them vp with little filmes of wax, which they will not breake vntill winter and hunger driuethem to it. And thus doe they all the summer,

32.
The full cells they close with wax.

descending lower and lower from one cell to another, vntill *Virgo*: after which time they lay vp no more in store. For hontie then waxeth scarce abroad: and thence-forth they can gather no more wax to shut it in. As for that which they purchase by fight and forraging, it doth them little good. For the most part of it they presentlie spend: and if they saue any, they halfe fill a few cels with it: which being vncovered, either themselues or some other theeuues quicklie deuoure: according to the Prouerbe, *Euill gotten goods are soone spent.*

33.
Nectar & Ambrosia made of many simples, whereof each month yeeldeth variety.

Nat. hist. lib.
II. c. 8.

34.
Dandelion conserueth longest.

35.
What Pishes yeeldeth.

36.
What Aries.

37.
Pauus.

This *Nectar* and *Ambrosia*, together with those sweet and holesome vells that doe containe them, are gathered from infinite varietie of herbs, flowers, and trees, which God in his prouident bounty hath ordained to succeed one another. So that from *Pisces* to *Sagitt.* there neuer want some plants or other, containing these sweets: which the Bees feartly draw from them, without any hurt to the fruits: *Fructibus nullis nocetur.*

The Dent-delion, or after the French pronounciation Dandelion, may well be called *apiastrum* or *mellissophyllon*. For the Bees gather vpon it almost all the yeere. The Dazy and Yelowcra are next for continuance, but nothing so much regarded.

The Winter Giliflowre and the Hazell are the first. For they spring in *Pisces*, and sometime before. After them the Dazy and the hearb Bearefoot, the Violet, &c.

In *Aries* belides those before named, the Box, the Wither-palme, both greene yeelding *Nectar*, & yelow yeelding *Ambrosia*, Daffadill, Lide-lilie, blackthorne, &c.

In *Taurus* Slow-tree, Plum-tree, Gootebery not blowne, and blowne, Cherry, Peare, Cockbell, which is a Wood-flowre. About the middle of this month the chieft plants begin to flourish in great abundance: as Apple, Crab, Barbery, Beech, Crowpickes, Charlocke, Rosemary, &c. But specially the plentifull Vetch and Maple. They gather on the flowre of the Maple a whole month together, and somewhat on the flowre of the Vetch when his time is, v. but the greatest store of hony is drawne out of the black Spot of the little

Of the Bees Worke.

C.6.

little picked leafe of the Vetch, which groweth on each side the two or three ypper-most ioynrs. These they ply continually: I neuer saw Vetches, how farre soeuer from Hives, that for three moneths together (if the weather serued) were not full of Bees.

In *Gemini*, the first moneth of fruitfull Summer, besides those prime Plants, Vetch and Maple, (which now are in their prime) and the rest forenamed; Beanes also, which with their flowers haue also blacke spotted leaues like Vetches, on which sometime they gather, Arch-angell, Barberie, Fumitorie, Ribwort a kinde of Plantain, Holme or Hollie, Hawthorne, Elder, red Honie-suckle, Red-weede, white Honie-suckle, which they like much better than the red, &c.

In *Cancer*, with the fore-named, the blossome of the Vetch, as well as the Leafe, Benet, Malowes, the foucraigne Tyme, which yeeldeth onely *Nectar*: and therefore he was deceiued that said *Cruca Thymo plena*. Tyme, for the time it lasteth, yeeldeth most and best Honie: and therefore in old time was accounted chiefe, (*Thymus aptissimus ad mellificium. Pastus gratissimus apibus Thymum est.*)

Dum Thymo pascentur apes, dum rore cicadae.)

Himettus in *Greece*, and *Hybla* in *Sicily* were so famous for Bees and Honie, because there grew such store of Tyme: *Propter hoc Siculum mel fert palmam, quod ibi Thymum bonum & frequens est.* The Knap-weed flourisheth about the middle of this moneth, and the Blackberie about a weeke after: Both which, as sweet and plentifull, the Bees much haunt.

But the greatest plentie of the purest *Nectar* commeth from aboue: which Almighty God doth miraculously distill out of the Aire, (*aerei mellis caelestia dona*), and hath ordained the *Oake*, among all the trees of the Wood, to receiue and keepe the same vpon his smooth and solide leaues, (*Et quercus sudabant roscida mella*) vntill either the Bees tongue, or the heat of the Sunne haue drawne it away. When there is a Honie-dew, you may perceiue by the Bees: for, as if they smelled it: by the sweetnesse of the Aire, they presently issue out of their Hives, in great haste following one another:

33.
Gemini.

May

39.
Cancer.

June

Pl. nat. hist. l.

11. c. 21.

Hist. l. 9. c. 40.

Vir. Geor. 4.

Var. l. 3. c. 16.

40

Of Honie-dewes.

Virg. Georg.

41.

The Bees worke
most earnestly
in a Honie-dew.

V. c. l. 7. 44.

other: and refusing their old haunts, search and seeke after the *Oake*: which for that time shall haue more of their custome, than all the Plants of the Earth. Sometime the *Maple* and *Hazell*, take part with the *Oake*: but little and seldome. While the *Honie-dew* lasteth, they are exceeding earnest, plying their businesse like men in Haruest: you may see them so thicke at the *Hiu*-doore passing to and fro, that oftentimes they throw downe one another for haste.

42.

What the *Honie-dew* is.

Nat.hist.l. 11.

c.13.

What this *Mel Roscidum* should be, *Plinie* seemeth much to doubt where he saith, *Sive illud sit cœli sudor, sive quadamsyderum saliva, sive purgantis se aeris succus*. But, if coniectures might be admitted, I would rather iudge it to be the verie quintessence of all the sweetnesse of the earth (which at that time is most plentiful) drawne vp, as other dewes, in vapors into the third Region of the Aire, by the exceeding and continuall heat of the Sunne; and there concrete and condensated by the nightly cold into this most sweet and Soueraigne *Nectar*: and then doth it descend vnto the earth in a dew or small drizzling raine: that he might well say, *Constat materiam, ex qua mel gignitur, rori esse congenerem*. Which opinion is the more probable for these reasons. First because that when the yeare is backward in his fruits, the *Honie-dewes* are also backward: comming onely at such time as the flowers haue the most solid and best iuyce. Before, when the iuyce is weakke and waterish, and afterward, when it is dried and wasted, they are not. v. Secondly, because that in more hot & Southernly climats, where the fruits are more forward, the *Hony-dewes* also are more timely: as in *Italy* before *Gemini*. *Non omnino*, saith *Plinie*, *prius vergiliarum exortu*: v. whereas with vs they fall not vsually before *Cancer*. And thirdly, because the Countries that haue store of the best and sweetest flowers, haue euer the best *Honie*. v. n. 29.

Galen. de aliment. li. 3.

v. * in 43.

* See also *Aristotle* v. 22

Nat.hist. lib. 11

c. 12.

v. c. 10. p. 1. n. 20

43.

When the *Honie-dewes* are most frequent.

The hotter and drier the Summer is, the greater and more frequent are the *Honie-dewes*: cold and wet weather is vnkinde for them: much raine at any time, as comming from a higher Region, washeth away that which is already eleuated: (so that there can be no more vntill an other fit of hot and

and dry weather) and in the end it dissolueth them quite.

The time in which these Honie-dewes fall, is vsually betweene the first and last daies of this moneth: although the continuance of hot and dry weather may cause them come somewhat rather, or last somewhat longer, euen vntill mid-*Leo* or * after. They may happen at any time of the day: but for the most part in the morning before it be light: *Sub lucanis temporibus. Itaq; tum prima aurora folia arborum melle rosida inveniuntur.* And then shall you haue the Bees vp in a morning as soone as they can see, making such a shrill noise where they goe, that, as merrie Gossips when they meet, a man may heare them farther than see them.

44
The time when
they fall.

Nat. Hist. li. 11.
c. 12.

* In the year 1613, almost two moneths after the vsuall time, namely in the later part of *Virgo*, there fell diuers Honie-dewes: which came to passe by reason that continuall wet kept them backe in their due time, and *Virgo* followed exceeding hot, fit weather for them. But because the state of the flowers was then weake, the state of those Honie-dewes also was so weake, that the Bees were little the better for them. The stalls, that were taken, proued light: and most of the swarmes and stocks, that were kept for store, died for want before the end of Winter. Except onely in the Heath Countries, where the Heath-flower being then in his prime, those late Honie-dewes made fat stalls.

In *Leo* Vetches, Malowes, Tyme, Knap-weede, Blacke-berie, white Honie-suckle, Redweede, Thistle, Melone, &c.

Now also doe they gather on the Lauender, if their hastie Dames doe not gather it from them before it be readie.

In *Virgo* Knap-weed, Black-berie, Redweede, Dandelion, Malowes, Borage, &c. and the ample Heath, which yeeldeth Honie like vnto their Wooll. *V. n. 31. and c. 10. p. 2. n. 12.*

In *Libra* Dandelion, Heath, Iuie, &c.

In *Scorpio* Dandelion, Iuie, Arch-angell, &c.

And in this great varietie this is strange, that where they beginne they will make an end: and not meddle with any flowre of other sort, vntill they haue their load. *Mos apibus ne florum plura genera petant uno eodemq; profectu, sed singulis singula.* Infomuch that those which beginne with the flower of the Vetch will not once touch the rich spotted leafe of the same, before they haue beene at home. Although when they come to a flower that yeeldeth both Nectar and

45
What *Leo* yeeldeth.

July

46.
Virgo.

Aug^r

47.
Libra.

Sep^r

48.
Scorpio.

Octob^r

49.
The Bees gather but of one kinde of flower in one voyage.

Hist. an. l. 9. c.

40.

50

They gather Honie out of poison.

** Mathers or
May-weed,
Cotula scabida.*

51.

*What store of
Honie a stall
may haue.*

*Nat. hist. li. 11.
c. 24.*

*Delegacione
Moscovitarū,
& Munsterus
de Moscovia.*

*Paulus
Jovius*

a Gun Time

Ambrosia, they will vse sometime the Tongue, and sometime the Fangs, and gather them both.

But this may seeme more strange and wonderfull, that out of the most stinking and poisonfull weeds, as Redweed, * Margs, Henbane, and the like, they gather most sweet and holesome Honie: and yet regard not some of the best and sweetest Hearbs and Flowers, as the Rose, the Prim-rose, Cloue-Giliflowers; Wheat, Barley, Pease, &c.

What store of Wax and Honie a stall may gather, is vn-certaine: some hauing more, some lesse, according to the number of the Bees, the greatnesse of the Hiue, and the plentifulnesse of the yeares. With vs it is counted a good stall that yeeldeth two or three gawnes of Pulse: although in a tree there haue bene found more than seuen or eight. But in other Northerne Countreies we reade of farre greater quantities. *Plinie* affirmeth, that there was seene in *Germany* a Honie-comb eight foot long. And *Paulus Iovius*, that in *Moscovia* there are found in the Woods and Wildernesess great Lakes of Honie, which the Bees haue forsaken, in the hollow trunks of marvellous huge trees. In so much that Honie and Wax are the most certaine commodities of that Countrey. Where, by that occasion, he setteth downe this Storie, reported by *Demetrius* a *Moscovite* Ambassadour sent to *Rome*. A neighbour of mine (saith he) searching in the woods for Honie, slipt downe into a great hollow tree, and there sunke into a Lake of Honie vp to the breast: where when he had stucke fast two daies, calling and crying out in vaine for helpe, because no bodie in the meane while came nigh that solitarie place; at length when he was out of all hope of life, he was strangely deliuered by the meanes of a great Beare: which comming thither about the same businesse that he did, and smelling the Honie stirred with his striuing, clambered vp to the top of the tree, and thence began to let himselfe downe backward into it. The man bethinking himselfe, and knowing that the worst was but death, which in that place he was sure of, beclipt the Beare fast with both his hands about the loines, and withall made an out-cry as slowd as he could. The Beare being thus suddenly

dainely affrighted, what with the handling, and what with the noise, made vp againe with all speed possible: the man held, and the Beare pulled, vntill with maineforce he had drawne *Dun out of the mire*: and then, being let goe, away he trots, *more afeard then hurt*, leauing the smeared Swaine in a ioyfull feare.

THE Bees earnest and hot Labour, and the drought of the Aire, together with their cholerike Complexion, which their very hue bewrayeth, doth cause them much to desire cold Water. Somethinke it serueth onely to feed their Schadons: (*Aquam tum portant, cum prolem nutriunt*) v: and that not without reason, seeing that *Ambrosia* their daily food is hot and dry: and indeed when the Drones are done away, and breeding is ended, the Bees are nothing so frequent at the wating-places. But *Columella* thinketh the vse thereof to be more generall, *Sine qua neq; fari, neq; mel-la. nec pulli deniq; figurari queunt*. Vnto whom the Poet, in the place first cited in this Chapter, seemeth to assent; making water and flowers the common matter of their three workes.

The Wating-place should ^a not be farre from your Garden, ^b in the next side of a Pond or Brooke, ^c made sheluing, not very steepe, in manner of a Foord, and ^d defended from Beasts, Geese, Duckes, and such like: and especially young Ducklings, v. ¶ 3. in n. 59.

^a For they will neuer goe farre for water, if any be to be had neere hand. *Sub manibus urbis aquantur*. And therefore when you see Bees wating in woods or other places, not neere any Hives; bee sure those are wilde Bees, which are not farre from their nest. Watch them therefore which way they flie: for they will thence directly to it. Which if it be not within view, take a Reede or Kex, or some like hollow thing open at one end, with a chinke cut in the other to let in light: and taking vp a Bee by the wings put her into the Cane, and shut her in with your thumb: while she goeth downe to the light, put in an other, and so as many as you thinke good. And then where you last see the Bees flying homeward from the water, goe to that place, and there let out one of the Bees in the box: which, when she hath cast a Ring to know where she is, will fly as directly home as the other: likewise where you see her last, let out another: and so the rest, vntill they haue brought you to the stall.

52.
*Bees haue neces-
sarie vse of wa-
ter.*

53.
*Chiefly for their
breed.*

*Hist. an. l. 9. c. 40
V. 5. 7. n. 24.*

*De rust. l. 9.
c. 5.*

54.
*The making of
the Wating-
place.*

Virg. Geor.

55.
*How to finde
wilde Bees.*

• Left the Bees, flying ouer the water vnto it, bee throwne downe by tempestuous winds, and so drowned: for which cause it is good to lay lugs ouerthwart the water, and other staies; that recouering them they may dry themselues againe, and so escape.

Virg. Geor.

*In medium, seu stabit iners seu profuet Lumor,
Transversas salices & grandia cunijce saxa,
Pontilus ut crebris possint consistere, & alas
Pandere ad astrum solem, si forte morantes
Sparserit, aut præcipis Neptuno immerferit Euros.*

• That they may safely settle vpon it, and that it may alwaies be kept moist by the neerenesse of the water. For they choole rather to draw their drinke out of moist earth, than from the water it selfe, though it be neuer so cleare: peraduenture that the earth hauing receiued his earthinesse, which before was insensibly mixt with the water, their triple searching tongue might the better trie out the pure element of water.

• Which otherwise will be the death of many: for they are so earnest in their businesse, that though you offer to tread vpon them, they will not moue.

56.

*Bee-troughes in
Gardens profitable.*

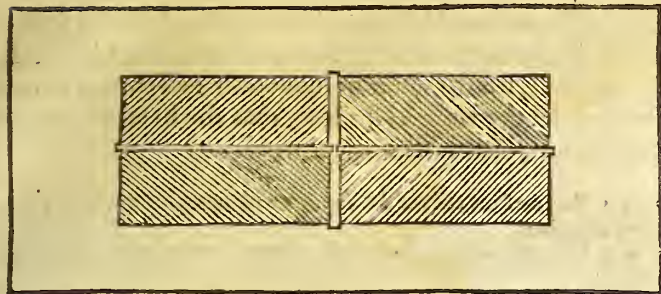
V. m. 53.

But because in the cold windie weather of the Spring, (at which time of the yeare the Bees haue most vse of water, v.) these watering places of Ponds and Brookes are dangerous; (where you may then see many throwne downe and drowned, and others, that scape drowning, to be so chilled, when they haue filled themselues with cold water; that they are not able to endure the wind, but faile and fall by the way) therefore it is behoueful to haue Troughes in your gardens, made for the nonce: whence the Bees may both sooner and safer fetch their water.

57.

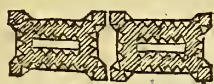
*The forme and
size of a Bee-
trough.*

For the forme and size of a Trough, let his hollownesse be two foot in length, seuen or eight inches in breadth, and foure in depth; the bottome foure inches thicke; the ends six or seuen; and the sides halfe so much. Moreouer, let the hollownesse be diuided into foure equall parts, by one partition of inch-board, in the middle from side to side; and by two partitions of halfe-inch-board, from each end vnto the middle partition: after this fashion.



And to keepe the Bees from danger of drowning, vnto which they are very obnoxious, (for if they but touch the water with their wings, they cannot rise from it) let each Quarter of the Trough haue his Couer, in thickeesse about halfe an inch, in breadth and length fitting to his Quarter ; but so, that without let it may rise and fall with the water.

The matter of this Couer must be corke, which must as well haue open spaces for the water to take aire ; as places for the Bees to light on : lest it being couered too close, doe corrupt and become vnSauourie. It is best to diuide each couer into two equall parts : and in the edges on both sides to cut little nicks. And so this may be the forme of it.



58.
*The trough-co-
uer, and the rise
of it.*

Other fashions both of their Troughes, and of their Couers, may be deuised : but these haue seemed to me in all respects most fitting.

A new Trough thus framed and fitted, is to be seasoned before it be vsed, by often scalding it, and changing the foule water ; vntill, hauing stood a day or two, it remaineth cleare, and without a glistering slime: afterward the older and more earthie it is, the better they like it.

The Trough being seasoned, set in some conuenient place, about a pearch from the Bees ; hauing a moueable plancke,

59.
*The seasoning
and ordering of
the Bee-trough.*

or the like, to defend it from cold rough winds in the spring, and from the Sunne when it is hot. At which time keepe the Trough full, lest the water be soone ouer-heated: and in cold weather let the water be shallow, that the Bees may drinke safely below, out of the chilling wind.

¶ 1 Bespread the ends of the Trough with cow-cloome, to keep them from chapping.

¶ 2 In frostie nights couer all the Trough, to keepe the water from freezing.

¶ 3 Keepe all Poultrie, and specially Ducklings, and Hens with chicken, out of your Garden: for, drinking at the Troughes, they will trouble, and tread vpon the Bees. And the brood-hens will kill them, for feare of stinging their chicken: and so will Ducklings also at the first, taking them for flies; which when they haue tasted, they will afterwards let alone.

60.
*Bee-troughes of
stone.*

61.
*Sometime they
water in the
streets.*

62.
*And after a
showre, all a-
bout the garden.*
V. c. 4. n. 13.

You may also make good Troughes of Free-stone, with wooden partitions let into the stone: but they are more apt to chill the Bees in cold weather, vntill they be mossie.

Sometime they will lie sucking at the neere plashe, puddles, and mire in the streets: where many are trod vnder foot of men and beasts. See therefore that such places be kept cleane and drie.

After a showre they water for the most part in your Garden vpon the bare earth, the grasse, and wheresoever they finde it wet from aboue. In the chiefe breeding months *Aries, Taurus* and *Gemini*, v. when the cold raine or wind hath kept them in some part of the day, they will lie so thick vpon the ground, if you haue any store; that you can scarce tread beside them. At such time therefore let no heedlesse stranger come among them.



CHAP. VII.

Of the Bees Enemies.



He good Bee, as other good things, hath many Enemies, from which shee needeth your helpe to defend her: namely, 1.the Mouse, 2.the Wood-pecker, 3.the Tit-mouse, 4.the Swallow, 5.the Hornet, 6.the Wasp, 7.the Moth, 8.the Snail, 9.the Emer, 10.the Spider, 11.the Toad, 12.the Frog, 13.the Bee, and 14.the Weather.

The Mouse, whether he be of the field or of the house, is a dangerous Enemy. For if he get into a Hiue, he teareth downe the Combes, makes hauocke of the Honie, and so starues the Bees. Some enter by the doore, or by some open place in the skirts of the Hiue: some gnaw a hole thorow in the top of the Hiue, where they know the Honie lieth: some keepe their old homes, and come to the Hiue onely for their bairs: some make their nests betweene the Hackle and the Hiue, that they may the sooner and the safer come to the Honie at their pleasure.

For remedie, first you must looke that your Hiues, whether they be of straw or wicker, be close and fast wrought. For if the straw be loose and soft, they will more easily gnaw their way thorow: and if the wicker be thinne, when they haue torne downe the cloome, they will creepe in betweene the twigs. Next see that the Hiues be daubed close round about the skirts, that there be no entring but by the Doore: which in *Taurus*, when the Bees come downe to watch, and thenceforth all the Summer, they will keepe well enough both day and night: but all the Winter, at which time the Mice make most spoile, it must be made so narrow, that they cannot get in. v. Also it behoueth you to remoue all things about your Hiues, that may hide and harbour them, v. for they will feare

I.
The Bees Enemies are many.

2.
1 The Mouse.

3.
Remedies against the Mouse.

1

2

V. 6, 3, n. 37.

3

10 V. 6, 2, n. 8.

4

V.C. 5. n. 23.

5

to come and goe in sight, lest the Cat meet with them by the way. Moreouer, it is good now and then, in drie and warme daies, to take off the hackles, as well for this as for other causes. v. Those that nestle vpon the top of the Hiue, when the hackle is taken off, will sit still amazed so long, that you may be sure to crush them against the Hiue with your hand. Lastly, you shall doe well to set baited * traps in their way, that so they may come short.

A Samsons post.

* There is none better than a Samsons Post: which is a flat Couer or Rooffe supported by a triangular Pillar or Prop, whose three sides doe so hold one by another, through the weight of the Rooffe, that the loosing of one is the loosing of all: and so the Prop failing the Rooffe falleth.

The Rooffe.

The Rooffe may be a Plankes or Boords end, or the like, twelue inches long and ten broad: which of it selfe, or with some aduantage weigheth foure or fise pound.

The parts of the Prop.

The three sides or parts of the Prop (namely, the Post, the Sweeke, and the Brace) are three sticks, all almost halfe an inch broad, and halfe a quarter of an inch thicke.

The Post.

The Post is moreouer three inches and a halfe long, and sharpened at one end.

The Brace.

The Brace likewise three inches and a halfe long, and sharpe at one end; with a nicke on the broad side halfe an inch within the other end.

The Sweeke.

And the Sweeke eight inches long, with a nicke on the vpper broad side a little within the out end; and another on the left edge, two inches and the thickest of the Post within the broad nicke.

The framing of the Prop.

The parts of the Prop being thus formed apart, are to be framed together in a triangle, after this manner. First, take the Brace in your left hand, and beare vp the fore-side of the Rooffe with the blunt end, the nicke being inward: then set vp the Post somewhat leaning toward you, with his sharpe end in the nicke of the Brace: then hooke the edge-nicke of the Sweeke to the Post: and make all fast with the sharpe edge of the Brace fixed in the broad nicke of the Sweeke.

The baiting of the Sweeke.

But first bait the Sweeke with a thinn peece of good Chesse, or Bacon, or Suet, tyed with a thread vpon the inner end. And bee sure that the Prop doe stand so sickele that it may easily be loosed: and that the Rooffe when it falleth, lie flat and euen with the Floore, lest the poore Mouse lose his labour.

Sed instar omnium erit hoc unum. R. Farina 1. auenacea novae aridae dulcis Drachmas IV. tere: 2. Arsenica alba 3. semidrachmam, in puluerem quam queas 4. minimum per se pertere: 5. sacchari puri semidrachmam cum arsenica contere: saccharatam arsenicam farina permisceto. 6. Compositum hunc puluerem laterculis superimpositum, juxta murium cava, & in locis

Of the Bees Enemies.

C. 7.

ab hisdem frequentatis (7. ceteris amotis esculentis) dispone. Sed nocte primâ simplicem expone farinam : cui vorata farinam saccharatam substituas secundâ : tertiâ triplex hic pulvis succedat : qui jam audaces satis & nihil suspicantes , duarum vel trium spatio nocturnum , & mures & sorices pariter , edes tuas infestantes una omnes perdet. Si verò aduersus luxuriantes sorices certius velis remedium ; cum pertrita arsenica drachmâ una contere sacchari drachmam unam : saccharatam arsenicam bynes dulcis molita uncia uni permisceto , & tribus quatuorue locis frequentatis dispone. Aut etiam ibidem passas arsenicâ merâ pertrita intus modicè aspersas. Sed diligenter cura, ne Canes, Gallina, aliave innocua animalia istud degustent: quod facies, si noctu tantum expositum interdum recondas.

- 1. Pel triticæ. 2. Pera.
- 3. Et arsenica sit tantum decima compositionis portio : nam si prædominetur; mures, & magis sorices, virius odorantes recusant escam, quam rite compositam quidè vorant: sed medicum sufficit.
- 4. Ne mandentes durities offendat.
- 5. Et quod dulcedine oblectat, & quod, vt arsenica bene trita, inter dentes stridet : hoc enim secundâ nocte tuiò vorantes, tertiâ arsenicam, quam stridore & colere refert, minus metuent.
- 6. Quantitas nucis arellane singulis sufficit laterculis.
- 7. Nam si alia suppetant cibaria, fucatas escas deuorant : nec ubi frans semel suboluerit, illis postea decipalis facillè decipiuntur.

The Wood-pecker or Yippingale, if hee finde any hoale in the Hiue against the Honie, doth with his long round tongue draw it out : but he doth more harme to Wood-Bees then Garden-Bees.

4.
2. The Wood-pecker.

Of Titmuse, there are three sorts. The great Titmouse (which of his colly head and breast some call a Colemouse) is a very harmefull Bird. For although sometime hee seeme content with dead Bees, yet is hee a great deuourer of the quicke also. In winter hee taketh them at the Hiue as they come forth : when the cold makes them keepe in, hee will stand at the doore, and there neuer leaue knocking till one come to see who is there: and then suddenly catching her, away he flies with her: and when he hath eaten her, he comes againe for more: eight or nine will scarce serue his turne at once. If the doore be shut that none can come forth, hee labours to remoue the Barre : if that be too heauie, he falls to

5.
3. The Titmouse.

6.
The subtil practice of the Titmouse.

moining about the doore for a new way : and when these deuices cannot get them out ; some haue the skill to breake the wals of the daubed Hiues aboue, ouer against the place where they lie : and there they are sure to haue their purpose. But in the spring, when the Bees come to the palme, hee standeth there watching for them ; and while they are busie at their worke hee deuoureth many. The little Ruffet one in the Winter feedeth only on dead Bees ; but in the Spring he will take part with the great one. The little greene Titmouse I cannot accuse : except it be only for eating a few dead Bees, and that but seldome in some hungrie time.

2

3

7.

4. The Swallow.

Nat. hist. li. 11.

c. 13.

Nat. hist. li. 10.

cap. 24.

The Swallow taketh them as they flye, *Populatur hirundo.* & alibi, *Ea demum sola avium non nisi in volatu pascitur*: But I am perswaded shee doth much lesse harme than the Titmouse, although she haue a worse name. The Long-winged Hauke makes the fairer flight ; but the short-winged is the Kitchen-hauke. These birds therefore are not to be suffered.

Virg.

---- Absint meropesq, alieq, volucres,

Et manibus Progne pectus signata cruentis.

8.

Remedie against
the Titmouse
and Swallow.

Hist. l. 9. c. 40.

Aristotle

Let boyes destroy their neasts in Summer, and catch the Titmouse in Winter, with * Traps baited with dead Bees, Oats, or Tallow. Aristotle ioyneth the Waspe, the little Titmouse, the Swallow, and the great Titmouse together. *Inferunt injuriam apibus maxime vespa, & avicula quas paros vocant, atque etiam hirundo, & merops qui apiaster est. Quamobrem apiarij vesparum latibula, & hirundinum ac meropum nidos propinquos alveis tollunt.*

* As Cage traps, Pit-falls, and Samsons-Posts (v. * in n. 3) But then set a Lath before the Prop, leaning from the Floore to the Roofe, lest the busie Bird t' row it downe for nothing.

9.

3. The Hornet.

The Hornet also deuoureth Bees : being so much too strong for them, that they can make no resistance. Which the Poet meant where he said,

Virg.

Aut asper crabro imparibus se immiscuit armis.

Hir manner is to fly about before the hiue, till she haue spied hir prey settled at the doore: and then suddenly she taketh it in hir feet, and flieth away with it as a Kite with a Chicke.

In

Of the Bees Enemies.

In destroying the Hornets you must bee warie: for one stinging doth oftentimes cause a Feuer, and lesse than thirtie, as some say, will kill a man. *Itellus crabronum haud temere sine febris est. Auctores sunt ter novenis punctis interfici hominem.*

The Waspe doth much more hurt than the Horner. For the Horner now and then killeth a Bee: but the Waspe wasteth the Honie, whereby many whole Stalls doe perish. For, besides the harme that she doth hir selfe, she doth oftentimes set the Robber v. on worke: who, when the Waspe hath begun, will be readie to take part with her, and then all goes to wracke. A Waspe is by nature harder and stronger than a Bee, specially in *Libra*: insomuch that oftentimes she breaketh from two or three of them, though they haue all hold of her at once: and perhaps killeth one of them out of hand. At *Cancer*, or, the Spring being hot and drie, in the later part of the former moneth, the Waspe beginneth to bee bred: v. within a moneth after shee first appeareth: and in a while shee beginneth to feed vpon dead and weake Bees: which shee quickly cutting off in the middle with hir Fangs, first carrieth away the neather-part; and anon fetcheth the other, when she hath bitten off the wings (for easier carriage) not farre from the place where she rooke it vp.

Within a moreth after hir comming abroad, shee waxeth bold, and aduentureth into the Hiues for honie: but, by reason of the strangeness of hir voice and habit, shee is deseried before shee come neere. And at the first (while the weather is warme, and the Bees both early and late keepe watch and ward at the Hiues doore) comming single against many, shee is commonly repulsed, and sent backe againe with a Flea in hir eare: and if by chance shee slip in, shee doth not alwaies escape. Sometime shee is killed in the Hiue, and brought forth dead: sometime without the doore, when she hath got hir prey. But afterwards, the weather waxing cold, and specially in mornings and euenings, and the Bees therefore retiring from the doore higher into the Hiue; the Wasps make great spoile, specially among them that are weake. And this they continue vntill *Scorpio*: after which time they begin to weare. Neuerthelesse while they liue, that is vntill

C. 7.

10.

*The Hornets
sing in dangerous.*

Nat. hist. lib. 12.
c. 21.

11.

6. The Waspe.

P. n. 25.

12.

When she feedeth
vpon Bees.

13.

When she stealeth
Honie.

14.

When they weare
away.

Sagittarius (if abundance of cold and wet rid them not a little rather) they will be flching : and one Waspe will carrie out as much as two Bees bring in.

15.

In what yeere the
Waspes are few.

V. c. 4. n. 8.

The Winter wet and cold , killeth many of the Mother-Waspes v. as they lie in their sleepe. The Spring wet and cold hindereth their breeding : for being by that meanes kept in , when their time is come to flie abroad and feed ; they pine and faint , so that either they breed not at all , or verie late. And when a warme fit in the beginning of *Aries* hauing let them abroad , cold and stormie weather commeth suddenly vpon them ; they are shut vp againe , and so starue for the most part with hunger and cold : that your Bees shall not be much troubled with them in such a yeere. Yea continuance of wet , though without cold , is such an enemy to the Waspes ; that in the yeere 1613 , though , the former Summer being exceeding dry , the Waspes were multiplied , and the Winter being milde , the Mother-Waspes were many at first ; yet the Rainie Spring and Summer , did so spill their nests , that there were no small Waspes seene till *Libra* , and then verie few.

16.

In what yeere
they abound.

But the Winter being milde , and the Spring and Summer continuing warme and dry , they liue and breed in euerie place : that , without continuall and diligent attendance , you shall be sure of great losse among your Bees , though the former yeere there were but few : For one nest yeeldeth breeders enough , if they should all liue , to store a whole countrey.

For these causes , *Ann. 1611.* there were euery where such multitudes , that the like I thinke was not knowne before in our memorie : insomuch that within two or three Furlongs of my Garden , were killed that Summer about fittie great nests : (and yet , by the resort to our Bees , wee knew we had not all) besides 22. Mother-Waspes killed in the Spring at our Bee-trough , which would haue made so many nests. And 1620. for the same causes the number was as great or greater : and yet the exceeding wet Summer following I saw not one small Waspe.

17.

Remedies against
the Waspes.

Wherefore , if you loue your Bees , suffer not a Waspe nest about you.

The ready way to rid them , is , If they be in a Tree about the

the hoal, to smother them with Brimstone or Bunt, as you kill Bees. If in the Thatch of an house, (when you haue made way to the Combes) to scald them. If in the ground (as most commonly they are) you may likewise scald them , and so take the Combes out whole , and giue the Grubs to your Chicken : although the Boyes make better sport in burning them. But if you be in haste, and care onely to dispatch them quickly and quietly, thus doe. First, stop their way close; that they within breake not out vpon you (for those that are abroad comming home wearie and loaded are more gentle.) Then presently with a * Waspe-spade search for the Nest: which, if it be shallow, is quickly found. When you haue found it (which you shall know by the easie entrance of the Spade) then dig downe round about it : and hauing thus rounded the Nest, stamp the earth downe vpon the Combes, and so haue you done. If you finde not the Nest because it lyeth † deepe ; then dig vp the ground a foot about the hoale; and hauing found their way, stop it fast with earth, and tread in that you digged out, and let them alone. If this be done in the day when many are abroad ; the euening or morning following you may kill them with your foot : but in the euening you may take them all together.

2.

3.

4.

* Which is a thin Iron one , whose Padle is not aboute foure inches broad next the Socket, and thence taperd vnto three inches at the steeld point, and eight or nine inches long. If it bee broader it is not so apt to enter, and so to finde and round the Nest : and a thicker one is apt to let out the fresh Waspes , that will trouble your worke : but you may make a shift with any ordinarie Spade or Padle-staffe.

† In Corne-ground the Nest is begunne vnder a Furrow , and therefore is alwaies shallow : in old laine it is begunne in a Want-hole , and therefore it is sometime shallow, and sometime deepe.

And to destroy those that resort to your Hiues, set by them Sider, Vertjuice, sowre Drinke, or Grounds, in a short necked Violl open, or other Glasse couered with a Paper that hath a hoale in the middle : and so you shall catch many. Also you may take of sweet Apples, or Peares, or beafts Liuer, or other flesh, or any thing that they loue, foure or fise slices or more, and lay them in so many seuerall places among your Bees :

5.

Hist. l. 9. c. 40.

vpon which you shall haue sometime as many as will couer the Bait, which you may kill at once, as Butchers kill Flies.

Aristotle teacheth you an other way : *Impugnantur* (saith he) *Apes à vestris : quomobrem Apiarij eas venantur constitut à ollâ, & carne in ea posita. Vbi enim multa ad carnem accefferint, apposito operculo super ignem ollam ponunt.* You may also vse other meanes to kill them your selfe. How to helpe and defend your Bees against them, see c. 3. n. 46. 47. 54. 55.

18.

7. The Moth.

The flying Moth lyeth betweene the Hackle and the Hiue, and breedeth little Wormes, or crawling Moths, some in the skirts of the Hiue, some within vpon the Stoole, wrapt in the drosse or scouring of the Combes, and some without vpon the Hiue, specially in the cracks of the dawbed Hiues.

Nat. hist. l. 11.

c. 19.

19.

8. The Snail.

Plinie speaketh thus of them : *Papilio etiam ignavus luminibus accensis advolitans pestifer, nec uno modo : nam & ipse ceras depascit, & relinquit excrementa quibus terebines gignuntur.*

They offend the Bees also with their mealiness, as the Snail doeth with their sliminess. Wherefore rid your Hiues of these guests. The Moths are easily crushed before or vpon the Hiue : and the Snail, though you kill them not, will not long abide, if there be no harbour of long Grasse, Weeds, or other things about the Hiues. But as for the Moth, if you suffer her, your selfe shall haue more cause than your Bees to bee offended. For albeit in the cold Spring shee breed about the Hiues, hatching hir young by the heat of the Bees ; yet when the heat of the aire will suffice for that purpose, shee chooseth rather to lay her blotches in woollen, their naturall nest and nourishment : especially if it bee nappie, that there she may safely hide them. In which place, till they be growne to their bignesse, they lie fretting and eating the Cloth : and then after a while they creepe out of their skins flying Moths. The Maides that sunne their clothes to rid the Fleas, let them take heed how they doe it neere the Bee-fold, lest they bring in worse enemies than they carried out. If the Woollen bee oylie or greasie they like it the better : and for that cause good Huswiues Yarne lyeth not long vnwoven.

20.

What harme the Moth doth.

21.

9. The Emet.

If Emets bee neere your Bees, they will much trouble them, biting them and hanging vpon them : although the

Bees,

Bees, if they be lustie, will kill many of them that come to the Hiue. But if it be a poore Stall, they will in time possesse the Hiue, and eat vp the Honie. The best remedie against them is to scald them.

The Spider, as the Moth, doth vse to harbour betweene the Hackle and the Hiue: where commonly she hath a Bee or twaine in store to feed on, an vnfit melle for such a mouth: Sometime she hangereth hir Nets vnder the Stoole; which easily intangle a wearie Bee, when shee commeth laden home, and missing of the lighting place falleth into them: yea, and sometime where the Bees are few, chiefly in the winter, they will bee bold to enter the Hiue, and there weaue their fatall Webbes. *In foribus laxos suspendit aranea casses. Aranei quog; vel maximè hostiles: cum preualuere ut intexant, enecant alveos.*

22.
10. The Spider.

The Toad is by nature so noysome to the Bees, that while he is about the Hiue, though he lie but vnder the Stoole, the Bees will not prosper. He is said also to deuoure them at the Hiue, as the Frog at the Warring-place. *Rana Apes, ubi ad aquam accesserint, rapiunt: quoniam eas Apiarij per paludes & stagna, unde Apes aquantur, venari solent. Rubeta etiam Apes interimit: subiens enim aditus alvei afflat, & observans rapit evolantes. Nullo hac affici malo ab Apibus potest; sed ab Apiario facile interimitur. Item, Insidiantur aquantibus Rana: qua maxima earum est operatio, tum cum sobolem faciunt. v. Nec ha tantum que stagna riuosq; obsident, verum & rubeta veniunt ultro, adrepentesq; foribus per eas sufflant: ad hoc provolant, confestimq; abripiuntur.*

Virg.
Nat. Hist. l. x. i.
c. 19.

23.
11. The Toad.

12. The Frog.
Hist. an. l. 9.
c. 40.
Ibidem.

Nat. Hist. l. x. i.
c. 18.
V. c. 6. m. 53.

BVt not any one of these, nor all these together, doe halfe so much harme to the Bees, as the Bees. *Apes api*, as *homo homini*, *Lupus*. They make the greatest spoile both of Bees and Honie. For as they of the same Hiue liue in inuio-
lable peace one with another; so haue they no entercourse, no friendship or societie with others, but are rather at perpetuall defiance, and deadly feud with them. In fight they are fierce, and in victorie mercilesse: within the space of a day or twaine, yea, of an after-noon sometime, if the Hiue bee open

24.
13. The Bee the
Bees greatest ene-
mie.

open that they may haue easie passage to and fro, they will haue rid him cleane. And therefore all Bees, of all their enemies, doe most dread strange Bees; knowing well in what danger they are to bee robbed by them both of goods and life.

26.
Robbing or
fighting of Bees
in winter and
summer but list-
ele.

27.
In the Spring
more earnest.
F. n. 28. c. 31.
F. n. 42.
F. c. 3. n. 65.

28.
The most spoile is
made in Haruest.

29.
What Stalls are
most subject to
robbing.

30.
What Bees are
the Robbers.

This robbing is practised all the yeere. In winter, as oft as the weather is faire and warme, some will bee prowling abroad. And some are so theeuishly disposed; that all the summer long, when abundance of Honie is euery where to bee had for a little labour, they will yet be filching though they die for it. In the Spring they are more earnest; finding now fit time to fetch after that which they least behinde at Haruest, v. and to repaire their decayed store, both of Honie and Bees. v. And therefore now haue an eie vnto them: and defend the weaker swarmes from their violent irruptions. v. Those Stalls that haue lost their Queene, or too many of their companie, or are offended with the corruptnesse of their Combes, or doe dislike their standing for coldnesse, moistnesse, mustinesse, bleetnesse, or vsfauorinesse; as taking no pleasure in their liues, doe now easily suffer themselues to be robbed. And if none will come to rob them; then on some faire day they will away together, sometime leauing both Honie and young ones behinde them.

But in *Virgo* is the most dangerous time of all. Then shall all the Stalls in your Garden bee tryed of what mettle they are made. And *Libra* would not bee much better, but that the most spoile is done before. Little and poore swarmes are now subject to robbing. Likewise those Bees that are offended with the blacknesse and rottennesse of their Combes, caused through age, or wet, or with abundance of noisome stopping; will most of them goe forth in the swarmes, leauing a very few, sometime not past a handfull, in the stocke: which yet in robbing-time will keepe the doore, as though the Hiuc were full: but the Robbers finding their weaknesse, will surely spoile them, if they bee not preuented. How to know such weake Bees, and what to doe to them, see further c. 3. n. 46.

The Robbers are thought to bee poore swarmes and stocks

Of the Bees Enemies.

C. 7.

stocks, which haue not sufficiently provided themselves for winter. Of which opinion was *Plinie* where hee said: *Quod si defecerit alicuius alvei cibus, impetum in proximas faciunt rapina proposito.* But indeed such are fitter to bee robbed, as before is said, than to be robbers. There is no theefe to the rich theefe: who, although he haue enough, and more than enough; yet by hooke or by crooke hee will haue more, though the poore starue for it.

Nat. Hist. l. i. c. 17.

At the beginning of Wheat-haruest, the state of flowers decaying, which is alwaies about *Virgo*, the maine robbing beginneth. Then doe they send forth some of their stoutest yonkers to spie and giue the onfet: which, going about from Hiue to Hiue so farre as their walke extendeth, doe proue all. Where they haue once sped, at their returne they bring more of their companie; vntill in the end that whole Stall be made acquainted with it. Sometime it happeneth, that though there bee an hundred Stalls within a walke; yet the robberie is done altogether by one: sometime by two or three, all the rest being quiet. And this one thing is strange, that whereas no Bees will abide strangers in their Hiues with them; yet theeeues will suffer one another, and agree all in stealing, though they be of diuers Hiues.

31.
How they begin the fray.

32.
Theeues of diuers Hiues agree together in robbing.

When the theeeues, hauing first made an entrie, begin to come thicke, and the true Bees perceiue themselves to bee assaulted by many; they suddenly make an out-crie: and issuing out of their holds by troopes, presently prepare themselves to battell. Some keepe the gates: some as Scout-watches fly about: some runne in againe to see what is done there: some beginne to grapple with the Enemie: and that with such a noise and dinne, as if the Drum did sound an all-arme. Besides which base sound, you shall eftsoones, in the heat of the battell, heare a more shrill and sharpe note, as it were of a Flute.

33.
The description of the Bees battell.

34.
In the battell is heard a sound like a Drum and a Flute.

Virg.

————— & vox

Auditur fractos sonitus imitata tubarum.

Which I am out of doubt is tuned by their generall Commander, encouraging them to fight for their Prince, their liues, and their goods. Then shall you see the enemies be-

35.
The assault of the enemie.

R

stir

36.
The defence of
the besieged.

stir themselves most venterously : some violently through the thickest thrusting in at the gates, others scaling the walls, and tearing them downe. If they once make a breach; without present succour, you shall quickly haue an end of that fight. On the other side, the defendants will behaue themselves as brauely, not giuing any rest to the enemy : part encountering with them that are without, part with them that haue broken in: whom in a while they draw out by the heeles, some dead, and some aliue. Likewise without you may see some slaine forthright with the thrust of the Speare: some so deadly wounded, that they are not able to goe three foot from the place : and some more lightly strooken presently to lose the vse of their wings, and for a while to leape vp and downe, forward and backward, like mad things.

How long they liue after they are hurt, see c. 1. n. 23.

37.
Neither side
willing to yeeld.
Virg.

So loth are these couragious warriors to yeeld on either side, vntill there bee no remedie.

*Ingentes animos angusto in pectore versant,
Vsq; adeo obnixi non cedere, dum gravis aut hos,
Aut hos versa fuga victor dare tergacoegit.*

V. c. 1. n. 40.

In their fight they are so furious sometime, and so thicke about the Garden; that, vnlesse you haue on your complete harness, v. you may not dare to come nigh them.

38.
The exercise of
the defendants
when the enemy
retireth.

This also I haue noted, that when the robbers are so few, that small resistance will serue; yet being called forth they will not bee idle; for you shall see some of them running vp and downe about the Hiue, to seeke and search if any more come: others, like trained Souldiers, practising to fight: here one wrestling with an other in single combat: there two, or three, or foure setting against one; as their vsuall manner is to deale with the theues. If you would know whether this fight bee in jest or earnest, with fellowes or with foes; the manner, and the end thereof will shew you. For if they bee fellowes, their fight is not so fierce, and they will part quietly as friends: whereas if they be foes, though they scape, it shall bee with much adoe. For if the true men cannot kill the theues; yet will they hold them by the legs or by the wings so long as they can, in hope to haue helpe, though they

Of the Bees Enemies.

C.7.

they be drawne after. Moreouer the young Souldiers, which haue scarce beene abroad before, you shall see the elder sort goe round about them, smoothing and trimming them in euery place, as if they did adresse, and hearten them to fight.

During the time of this battaile, as afterward, the Waspes like Vultures prey vpon the dead carcases, carrying them away peece-meale. v. n. 12.

39.
The Waspes like Vultures.

The battaile being ended by repulse of the enemy, those corpses, which the Waspes haue least, they honestly burie as farre from the Hiues as they can beare them.

40.
The battaile ended they bury their dead.

———*Tum corpora luce carentum*

Exoptant testis, & tristia funera ducunt.

Vug. Geon.

And then they draw together at the Citie-gates: and there they buzze one to another, as if in their language they did talke of the fight, and commend one an other for their fortitude.

The Robbers, preuailing not that day, will vp the next day so soone as it is light, an houre before the Bees vse to come abroad: and then doe they make a fresh assault. The Bees finding the enemy among them, are presently vp in armes: and so beginnes the second skirmish, which, without the taking of the Citie or the ouerthrow of the assailants, (which seldome hapneth) continueth, vntill very darknesse part them.

41.
The second assault of the enemy.

When the true Bees, finding themselues ouermatcht with multitude, see there is no remedie, and that no resistance will serue; at length they yeeld, and suffer the Conquerours quietly to spoile their goods. And after a while, when, by being together in the same Hiue, and sucking the same Honie, all smell alike; they will ioyne with their enemies, and help carrie away their owne goods, and so become friends and liue together. At night they lodge with them: but in the day-time they returne with their new fellowes to fetch that is least behinde. By this meanes some venterous stalls are suddenly much increased both in Bees and Honie: although when a Swarme not ouer-stored conquereth a poore stall, and so getteth, by the victorie, more eaters than mear; it

42.
When the true Bees yeeld, they goe with the Conquerors.

turneth to their owne ouerthrow : for when their food faileth they dye all together.

43.
Remedies.

Seeing therefore in so cruell and continuing a fight, oftentimes the enemies are Conquerours, and then all is lost ; and if they be vanquishd, yet this victorie is not without losse of men and goods, which the enemy euer now and then shifeth away ; I know your desire is to know how to succour the true men, either by preuenting this dangerous conflict, or by rescuing them in the same. For the first reade C. 3. n. 45.

44.
To preuent robbing.

46 47. For the other many practises haue beene tried : some cast dust, some drinke among them : the one whereof doth no good, the other harme. For drinke maketh them to smell all alike, so that the true men cannot know the.

45.
And to stay it, if you finde it in time.

Theeues from their fellowes : and therefore some vse to doe so, when two swarmes are put together, that they may seeme to be of one companie. If these vsuall helps be no helps, what help is there then ? If you perceiue their fighting in time before any great harme be done, then this must you doe. First stop them vp close, that none can passe either in or out, leauing onely a breathing place. Then shall you haue a double conflict, one within, an other without. The theeues that are within, hauing no way to escape with their preyes, first or last will be slaine all. They that are without, after a little wrestling, seeing nothing to be had but blowes, will not long abide this bootlesse danger. When you perceiue the siege to be raised, and that there is little or no fighting without ; (which will be about an houre after) then may you let out your Bees, making the doore halfe an inch high, and scarce halfe an inch wide. Those few that were within will they bring forth to buriall ; some then, some on the morrow. In the euening, when the Bees are all in, shut them vp as before. The next day betimes, before the Bees would be abroad, must you looke for some of them againe. When they are come, beat them away with a bough, but kill them not : for so may you doe your neighbour a shrewd turne, and your selfe too.

But let not the Bees out before noone : and then make the doore so narrow, that but one Bee may passe at once. So
will

will they keepe the Robbers out, and follow their businesse neuerthelesse. The next day you may let them out rather: and if the doore be so narrow that it hinder their passage, you may make it wider. If this do not suffice, but still the strange Bees will strue to get in; assure your selfe that stall will yeeld. And therefore if you bee loth to take it now, because of the Schadons that may corrupt the Honie; v. then must you looke vnto him carefully, lest by little and little it come to little or nothing.

V. c. 10. p. 1. n. 2

But if the Bees haue yeelded before you are aware of it, so that the theeuers rob quietly without resistance; or haue broken the Honie-cels; (which you may perceiue by the crumblets of Wax vpon the stoole) then, hauing shut the Hiue close as soone as you can, the next euening or morning take that is least: otherwise in the end you shall lose all. For the Bees there about smelling the Honie when the Combes are broken, will haue it or die for it.

46.
When it is too late, and what is then to be done

This fierce and cruell robbing being alwaies in Haruest, when people are busie in the fields; many Hiues are least Honie-lesse, and they neuer the wiser. Wherefore it is good to leaue some body at home, as well to watch these, as the two legged Robbers.

Neither is this robbing hurtfull onely to those that are robbed, but to the Robbers also. For many of them are daily cut off in the assault: (you may see them lye sprawling at euerie Hiue-doore) whereby their whole stall sometime is so weakned; that, while they seeke to prey vpon others, they become a prey themselves.

47.
Robbing hurtfull also to the Theeuers.

After a moist Spring, when Swarmes are most plentifull, v. is robbing most ripe: otherwise there is lesse danger.

48.
In what yeares robbing is most ripe.

Besides those Bees that are thus spoiled in robbing, many also are killed by other stalls when they come to them for succour. For in the Spring those Swarmes that were lateward, or haue beene halfe-robbed; when they haue spent all their store, the next warme day after, away they flye: some to a tree where they hang till they be dead: some aduenture into other Hiues: where if they haue large entrance, that they may throng in suddainely; sometime they scape with

V. c. 5. n. 5.

49.
Bees kill poore swarmes that wander in the spring.

the death of some few, and being mingled together continue with them as one stall: but for the most part they die euery each one. *v. c. 1. n. 22.*

50

To prevent the
death of poore
swarmes.

V. c. 10. p. 1. n.

12.

V. c. 10. p. 1. n.

51:

Many killed in
swarming.

52.

14. The weather.

53.

In Summer heat
hurteth the Bees.

54.

In Winter the
Sun-shine in
frost and snow.

55.

The remedie.

56.

Also the Eastern
winds and great
frosts.

V. c. 3. n. 61.

To prevent this losse, (1) when you perceiue them to wax light and weake; driue them into a stall that hath prouision enough, *v. (2)* If it be your hap to see them entering a stall that is well stored, lift vp the Hiue and let them in together, and so perhaps they may scape: and (3) if you finde any hanging abroad, you may put them into what stall you list; by rearing the stall before a handfull from the stoole, and laying the Bees vpon the Table, *v. close to the doore.*

Lastly, the Bees doe much destroy one another in swarming-time. *v. c. 5. n. 64, 65, 66, 68, 75, 76, 77, 80, & 81.*

Next vnto Bees, the greatest Enemy that the Bees haue is vnkinde Weather: whereby at all times of the yeare both they and their fruits are much empaired.

In Summer extreme heat melteth the Combes (specially of Swarmes) and so sheddeth the Honie; if the Hiues be not shaded, and well hackled. It also causeth the Bees to lye out, and so hindereth their swarming. *v. c. 5. n. 20.*

At Winter, the Sunne shining in frostie or snowie weather, is dangerous to the Bees. For the shine tillet them abroad, and the Frost chilleth them: many as they flye, that they cannot returne: and many that returne, while they rest on the ground before the Hiue. But the Snow amazeth them, and dazeling their eyes causeth them presently to fall, and with his vehement cold to rise no more: and most of all then, when, to shun the wind, they light in the shade. And therefore if, the Snow lying, the mildnesse of the weather draw them abroad; it is good to strew the Snow with straw, not onely in your Garden, but also without the fences, specially in the Lee-sides, if conueniently you may: and so shall you saue a number, which else you might see lying about, like slaine men in a foughten field.

Also the freezing Easterne winds, and all great Frosts kill many in the Hiues that be open, or vncovered: and therefore at such times it is good to shut them vp close, *v. and to see*

see them well hackled, v. c. 3. n. 15.

And if the cold continuing keepe them long in, it maketh them so sicke, heauy, and chilly; that many dye alfoone as they come abroad into the aire, vnlesse it be very pleasant.

v. c. 3. n. 62.

Also theraine doth oft-times soake into the Hiues, and so corrupteth the Combes, and killeth the Bees: specially where the company is small, not hauing heat enough to drie them againe. Wherefore prouide that alwaies your hackles be good. And for remedie (if any such chance happen) pull off the hackles in warme daies, that the Sunne may dry the Hiues againe.

But the greatest losse is in the Spring. For the Bees, specially the young frie (being laded and wearie with their labour) some at their worke, some in the way home, some at the Hiue-doore are beaten downe; not onely through sudden stormes, but also through cold rough winds: and then, vnlesse the Sunne shine or the wind lye, they neuer come home againe: insomuch that sometime you may see the Lanes v: strewed with them.

And therefore, when being a field they see a stormie or rainie Cloud arising, presently they hie them home for life: tumbling to the Hiue as thicke as Haile, thronging, and throwing downe one another before the doore for haste. Where; if the cold raine catch them before they can recouer the Hiue, they are in no better case than those that the storme beat downe by the way: although, when they are fresh and light, they will flye abroad in the midst of a warme shower, not caring for it.

They which are thus taken abroad, must take their chance: but if you defend your Bee-garden as you ought, v. you shall prevent the fall of many at home. And those that you finde chilled with cold (though they be quite dead, without sense, motion, and breath, yea and haue lien so all the day) you may, if you be disposed, reuiue with the warmth of your hand; so that it will seeme a miracle vnto you. For presently (their spirit returning) you shall see them begin to pant and breath againe: and anone they will flye away as lustie as the best.

57.

And the cold continued maketh them sicke.

58.

The raine roseth the Hiues.

59.

The remedie.

60.

The greatest losse by weather is in the Spring: for then infinite multitudes are beaten downe, laden and weary, with stormes, and wind.

V. c. 1. n. 49.

61.

At the rising of a Cloud they post home.

62.

Yet will they goe a field in the midst of a warme shower.

V. c. 2. n. 2. 3.

4. & 5.

63.

How to restore Bees to life.

best. But if you spie any store of such dead or halfe-dead Bees, then your way is to put them in a Glasle, and couering it, to turne it round against the fire, till you see them ready to flye.

64.

The wind causeth many to be drowned.

Also where Palme-withies, or other trees whereon they gather, doehang ouer the water; the rough winds throw downe and drowne a number of them, while they bee at worke. Many also, where there are no such trees, when they come but to drinke.

65.

The remedie.

Nat. hist. l. 11.

c. 19.

For remedie of the first, cut downe the trees: and for the other, see c. 6. n. 56.

Tot hostibus, tot casibus, tam munificum animal expositum est.

66.

The last and worst Enemy of all.

¶ There remaineth yet another Enemy worse than all these. For these all doe wrong the Bees but by little and little; some in their goods, some in their persons: and there is remedie shewed, if industrie be not wanting, against them all. But this, when he commeth, playeth sweep-stake with them; carrying away both Honie, and Wax, and Bees, and Hieue, and all at once: and there is no sufficient remedie found, either in the Bee-master, or in the Bees themselues against him: neither shall I, with all my skill, be euer able to deuise any; vnlesse the wisest of the Land, when they meet together, will ioine with me in the inuention. For first the Bees are least destitute of their Keepers helpe, seeing at the times of greatest danger, he cannot alwaies be *sub Dio* with them, nor they conueniently *sub Lare* with him: although some haue, for their safetie, put this in practise, housing them and shutting them vp close all the Winter: but not without much inconuenience. For by this meanes they are debarred of their necessarie recreation *v:* in a warme houre, when it happeneth: and if by chance they breake forth, they lose their way in againe, and their liues withall. And as they want herein their Keepers helpe, so haue they no meanes to save themselues, no not so much as the silly sheepe, which happily may runne away. For their resistance, which against some Enemies doth often preuaile, against the violence of this *sic Tenebrio* auaieth nothing at all: who stealing vpon them

F. 6. 1. n. 59.

c. 6. 3. n. 60.

Of the Bees Enemies.

C. 7.

them while they be at rest, & suddainly surprizing them, car-
rieth the poore Captiues (alasse) they wote not whither.
Although I haue read a Storie of a Stall, that being stolne did
sharply punish the Malefactor, making him to submit him-
selfe vnto their Master, and to aske him forgiuenesse. Indeed
I will not be bound for the truth of it, for it is no childe of
mine: but if any man desire to take it as it is, he shall haue it
as good cheape as I. *Cum noctu latro apes S. Medardi sub-*
ripuisset, apes ipsa in sancti viri ulionum, relictis vasis suis,
in malefactorem illum circumquaq; diffugientem acerrime ea-
tenus instimulatione persecuta sunt, quousq; ad Sanctum, vel-
let nollet, regrederetur, & ejus provolutus vestigijs suppliciter
pro commisso crimine veniam precaretur. Cui mox ut Sanctus
manum extendit benedictionis; apes, tanquam obediētes;
ab ejus insecutione cessaverunt, & antiquo Domini sui dominio
evidenter sese reddiderunt. Laur. Surius in vita S. Medardi.
Tom. 3. When a Theefe by night had stollen S. Medards
Bees, the Bees in their Masters quarrell, leauing their Hiue,
set vpon the Malefactor, and eagerly pursuing him which
way soeuer he ranne, would not cease stinging of him, vn-
till they had made him, whether he would or no, to go backe
again to their Masters house, and there falling prostrate at
his feet, submissly to crie him mercie for the crime commit-
ted. Which being done, so soone as the Saint extended
vnto him the hand of benediction; the Bees, like obedi-
ent Seruants, did forthwith stay from persecuting him, and
euidently yeelded themselves to the ancient possession and
custodie of their Master.

It were to be wished that *Pares culpa* might be *Pares panā*,
that all like offenders might haue like punishment. But sith
our Bees are not of S. Medards kinde, thus to rescue them-
selues from this mischieuous Enemy; it is meet their merit
procure them a protection: and as they prouide for the
health and safetie of men, v: so men should prouide for the
safetie and secure being of them. That such as delight in
things for their Country so profitable, might not by idle
and theeuish Varlers, vnprofitable members of the Com-
mon-wealth, be discouraged in their honest courses. Where-

Laurence Surius,
hs at Lubeeck 1522
ob at Cologne 1578
He wrote Lives of
the Saints 7 Blesed
(Watkins Bie)
Monereri.

V. c. 1. n. 1.
& C. 10. p. 3. n. 1.
& 2.

fore I humbly and heartily entreat all those, whether they be high or low, which shall reape either profit or pleasure by these my paines, that they would endeavour, as much as in them lyeth, by themselves and by their friends, that against this odious rapine it may be enacted, as a Law of the *Medes* and *Persians* which altereth not; that they which feloniously breake open these true labourers houses, shall, like other House-breakers, bee deemed and iudged as guiltie of Burglairie, and so haue no benefitor fauour by the *Muses*, that thus violate the *Muses* sacred Favourites. And heere, now my hand is in (though it may seeme a hard digression) let me begge the like boone for those other necessarie creatures, which, for their like certaine and generall profit, the Prouerbe hath ioyned with them in speciall commendation to the world.

*Who so keepe well Sheepe and Bees,
Sleep or wake, their thrise comes in.*

They serue for mans vse both without and within, not only to feed the belly, but also to cloath the back: for which necessarie vses, they deserue especially to be beloued and defended of all. And yet I thinke that in any thing, nay in all things else, there is not so much wrong and spoile done to the Countrey, as in them alone: Sheepe-stealing, through foolish pittie, is now growne so common and so continuall. Whereby, besides the infinite losses which true Subiects daily suffer in that kinde, the Commonwealth sustaineth an other great damage in Corne; the Husbandmen oft-times fearing and forbearing to sold their Land, lest their losse should be greater than their gaine. Surely, in my opinion, the very Boot-halers, or High-way-Robbers are more worthy fauour than such. For they are men of more generous spirits, both apt for seruice themselves, and to breed bold Souldiers for their Prince and Countrey, who, by good admonition, better imployments, or conscience of the sinne, are oft-times reclaimed: Whereas these Night-Rauens, for the most part, are base cowardly Knaues, neither fit for seruice, nor labour; a meere burthen to the Commonwealth:

Of the Feeding of Bees.

C.8.

wealth: and as incorrigible as sheep-biting Currees, which being once flesh't, doe seldome desist; vntill the bones or somewhat else doe happily choake them.



CHAP. VIII.

Of the Feeding of Bees.



Three moneths of the twelue are rich and plentifull (in which the Bees gather abundantly, and store themselues for all the yeere) *Gemini*, *Cancer*, *Leo*; but *Cancer* is better than both the other. In *Virgo* and *Libra* they liue of their daily labour

from hand to mouth: little increasing or diminishing their store; vnlesse they fall into the hands of Robbers, and then, without reskue, they lose all. But in the other seuen, either wholly or partly they feed vpon that store, which the three rich moneths did afford them. For *Scorpio* hath but the poore gleanings of decaying plants: the three still moneths nothing at all. *Pisces* beginneth to put forth fresh plants, which in *Aries* and *Taurus* are well increased: but this breeding time the mouths are multiplied more than the meat, which * vnkinde weather oftentimes suffereth them not to fetch in. So that all this while, they, more or lesse, spend vpon the stocke: yea the weaker stalls somewhat longer, being not so well able to indure the sharpe aire: and therefore, for want of some store to feed on betweene whiles at home, I haue knowne some die after Mid-*Gemini*.

For which seuen spending moneths, some swarmes are sufficiently provided: which you may reckon as Jewels, the verie *Spes gregis*; whose increase the next yeere is certaine, if they be not ouer-hiued. Some are not provided for halfe the time: and these, as desperately poore, are not worth the

1.
*In seuen moneths
the Bees spend of
the stocke.*

* *Rainie, cold,
and winde.*

2.
*Three sorts of
swarmes diuersly
provided.*

feeding. Others are provided for six, or five, or foure moneths : which, by the helpe of feeding, may liue and doe well.

June
The first^{3.} sort.

June
v. c. 5. n. 11.

Of the first sort are timely prime swarmes vnbroken : also faire Castlings not ouer hived, before *Cancer* ; yea and in kinde or backward Summers before *Mid-Cancer* : when the black-berry-blossomes are not yet come, *v.* nor the hony-deawes gone : For such haue sufficient both company and time, to make sufficient prouision.

The second^{4.}.

June
v. c. 5. n. 68.

Of the second sort are the ouer-little and late swarmes, whose paucitie and pouertie makes them vnlustie to trauell for more, and vnable to keepe what is gotten or giuen them. Such are sure to bee put before winter be past, by cold and hunger, out of hunger and cold. And therefore if you haue omitted to saue such by *Vnion* ; *v.* yet omit not to saue that little which they haue, and your vaine labour and cost in feeding them. *v. c. 10. p. 1. n. 3. in III.*

The third onely^{5.}
are to be fed.

Of the third sort are the midling and indifferent swarmes, which by their earnest labour haue gotten well, and gathered good store of wealth together : but yet, for some want of number or time, the summer leaueth them in some want of prouision.

6.
Stoc' is out of
proofe neuer to
be fed.

As for Stockes that haue stood two yeeres, and yet haue not sufficient stocke for these seuen moneths ; (whether they be such as haue not gotten it, or hauing gotten it haue lost it againe) they are out of prooffe : and therefore fit to be taken, not fed. *v. c. 10 p. 1. n. 3. in III.*

July
7.
Tis yeare
swarmes in
Virgo.
v. c. 10. p. 1. n. 2.

But because vnkinde summers may make good swarmes but poore, as contrarily a plentiful summer may much mend the worit ; after *Mid-Virgo*, when Bees are to be taken, *v.* it behoueth you to trie all your swarmes, by knocking and poising them : for the noise will tell you the greatnesse of the company, and the weight, their wealth. They that are vsed to poise them by hand, will resolute you readily in this point by aime : which till you know to doe, the Scales may direct you. For hauing taken the iust weight of the Hiue and all together, if the fore-knownne weight of the leere splected Hiue being deducted, there remaine not fiftene pound in all, to

8.
What quantitie
of Hony is re-
quisite.

Of the Feeding of Bees.

C. 8.

wit, for five pound *v.* in Bees, the double weight in honie and wax; that swarme is desperately poore, *v.* and fitter to be taken than fed *. If the swarme with his store doe weigh betweene fifteene and twentie, due feeding *v.* may saue him. If betweene twentie and five and twentie, hee is able to shift for himselfe, and liue without helpe. If betweene five and twentie and thirtie, esteeme him as right good, plentifully provided euen for a hard winter, and fitted to be forward the next spring †. And aboue that the greater the store is, the better increase it promiseth. Vnlesse, in some extraordinarie yeere, the Hue be cloyed with too much: *v.* for too much, as well to Bees as men, doth oftentimes more harme than good.

P. † in c. 5. n. 45. V. n. 2.

P. n. 14, & 6.

V. c. 10. p. 1. n. 3, in VII. & VIII.

* Yet they that haue but a small Bee-fold, and are content to be often troubled (specially at the second feeding-time) may try those that lacke a pound or two of this weight.

† And yet such though neuer so good, will perish neuertheless, if they chance to lose their Queene: which sometime happeneth to those that are much troubled in the huiung. *v. c. 5. n. 52.*

V. c. 1. n. 6.

Moreover, because a long winter and a rough spring following, with some other accidents, may waste them that were good, as, on the other side, a short winter and a milde spring may helpe those that were scantily provided; it shall not be amisse to try againe in *Pisces* or *Aries*, those that you suspect; and to feed them if you see cause. *v. n. 15. & 16.*

9.
Trye againe in
Pisces or *Aries*. *Feb for March.*

THE naturall food of Bees is Honie: for want, or for sparing whereof, many other things haue beene deuised. Aristotle mentioneth Figs, and all such sweet things. *Apinary ficus ac reliqua id genus dulcia in cibum apponunt.* And Plinie, speaking more particularly, commendeth Raylings, and Figs, and teased Wooll; wet in sweet Wine made of Raylings, or new Wine boiled, or Hony-water. *Si cibus deesse censeatur apibus, uuas passas siccas ue, ficosq, tufas ad fores earum posuisse conueniet, item lmas tractas madentes passo aut defruto, aut aqua mulsas.* And some of our Country-men haue practised to giue them Bay-salt, Bean-flower, Ground-mault, roasted Wardens, and Apples, and sweet Wort. All

10.
The Bees food.
Hist. l. 9. c. 40.

Nat. hist. li. 21. c. 14.

which things, though they will spend; yet cannot they be preserved by them without Honie.

Touching the counsell of *Plinie*, this is to be noted, that if you place their food *ad fores* before the doore, it will draw strange Bees vnto them; whereby the liues of the one, and the goods of the other will be indangered: if you place it abroad from your Hiue, then will it be common: and if within vpon the stoole, which is best, then must you remoueit in time, or keepe it close: *v.* otherwise it will be no better for them, than if it were set *ad fores*. And as for the deuice of teased Wooll, it is a sifter meanes to catch Bees, than to feed them. For if the liquor be about the Wooll, it will lime the wings of many; if not, many will be intangled in the small haire, as Birds in a grin. Couer it therefore with a linnen cloth, so that the Bees may not creep betweene.

II.
Private feeding.

The manner of feeding Bees in their Hiues is diuers. Some giue them Honie in a spoone: but that way many of them be-smear their wings: and if their fellowes lick them not cleane presently, before the cold chill them, they die. Others, to auoid this inconuenience, giue it them in a warme Toste: but this way wasteth the hony, & doth not altogether auoid the former inconuenience. Others haue other deuices. But indeed the only good way to feed Bees is with a combe, after this manner. First, take a fresh Combe of Liue-honie out of a Hiue, & lay it vpon some Prop or stay, that the Bees may worke, as well vnder as vpon. This Prop may be a woodden grate seuen or eight inches square, made of two sides halfe an inch deepe, and three ribs fastened into them with Douetailes, or with small nailes. For a need two seuerall square stickes may serue: but then you cannot so quickly either set it in, or take it out.

Then in a faire calme euening (when the heat of the day, and the Bees worke is past) place this vpon the stoole: so that the Feeding-combe be reared as nere the Hiue-combes as may be, not touching them, lest the Bees fasten this and them together. Then see that the Hiue, set downe in his place, be close cuerie where: and at the doore but roome enough for a Bee or two to passe. Then will these Bees to worke afresh, not ceasing day nor night vntill they haue rid the Combe cleane: which within eight and fortie houres will be effected. If they need any more, the next euening doe likewise.

Of the Feeding of Bees.

C. 8.

likewise. But alwaies when it waxeth darke, and the Bees are all in ; barre vp the doore : and let them not out till the next euening, when other Bees are quiet. Or if you doe it in the morning, be sure also to take out the Combe, whether he be rid or no. And still leaue the Hiue close, with a narrow passage.

If your poore Bees should not be thus defended from strangers, the feeding of them would proue a staruing of them. For the Borderers smelling the bootie will be sure to haue part of it, if they can come at it : and when that is done, they will set vpon the other, and so spoile all : as often it falleth out through this carelesnesse. Which causeth some to condemne all feeding of Bees, as painfull and fruidlesse : saying, If you feed them not, they can but die : and so will they doe when you haue bestowed your labour and cost. But this is disproued by experience : for those, which being fit to be fed *v.* are thus fed, do seldome miscarrie. That summer they prouide sufficiently for winter, and the next they are as likely to swarme and be fat as an other.

12.
Carelesse feeding
is staruing.

You may also feed your poore swarmes together, (if you haue no neighbour-Bees to beguile them) by setting any refuse-honie or leauings abroad in your Garden, hauing first barred vp those that need it not. This feeding-Hony, as that which is stolne, when they haue first taken their refection, they conuey into their void Cells : which, because they cannot now shut them vp, as before *Virgo*, for want of wax ; *v.* they doe but halfe-fill. And therefore they first spend of this late gotten hony, reseruing that, which was more safely laid vp, vnto the last.

V. n. 3.

13.
Publike feeding.

It is good to feed Bees before they need : (that they may saue their store, which they haue shut vp in their Cells, vntill the spring) namely, in the later part of *Virgo*, when the Combes are taken, *v.* or in *Libra*. For those that haue spent their owne store, and haue little or nothing least in the end of Winter, are so discouraged and so feeble with fasting ; that knowing their thin'bodies can beare out no cold, they will not come abroad, but when they are fed : vnlesse the weather be exceeding warme and caline : and the more they keepe in, the weaker

V. c. 6. n. 15.

14.
The first time of
feeding.

V. c. 10. p. 1. n. 2.

*Rug
Sept*

weaker still they are, and lesse apt to breed. But those whose rather feeding hath caused them to spare their store till the Spring, will be as cheerefull as the best: in any reasonable weather they will abroad, and fetch in that fruitfull *Ambrosia*, which causeth them presently to increase and multiply.
v. c. 4. n. 12.

At this first time therefore first finish the publike feeding: and then begin the priuate, specially of those that are vnder eightene pound: to which if you giue now the better part of their* due allowance; you may supply the defects of them, as also of the rest, at the second feeding-time, when their need will better appeare.

* Their due allowance, first and last to be giuen them, is so much at least, as the swarme with his store lacketh of twentie pound. v. n. 8.

*Feb^r or
March.* ^{13.} The second time
of feeding.

In *Pisces* or *Aries*, as soone as the weather is warme (not before, lest the cold chill them in their worke) if you feare they will lacke (which you may perceiue by their lightnesse & vnwillingnesse to come abroad) supply their want againe, and againe, if need be. But in this second feeding, for lacke of a Hony-combe, take a drie Combe, reserued for the purpose, and poure thereon so much Honie as it may receiue. If you thinke it be not liquid enough; then either warme it first ouer the fire, or else spread it all ouer the Combe with your finger, that it may sinke into the Cells: (for which purpose Liue-hony is best) then vse this honied combe as the Hony-combe. v. n. 11.

*April-
May* ^{16.} The third time of
feeding.

If either these fed Bees, or any other, chance afterward to lacke (namely in *Taurus*, or somewhat before or after) then feed them daily vntill mid-*Gemini*, giuing them, euerie euening or morning betimes, a spoonefull of Honie; and taking away the Combe againe before other Bees be at worke. But this is to be done without intermission: for the Bees will duly looke for it, and languish, if once or twice they lacke it.

If you vse to knocke the Hiue, when you put in the Honie; they will come downe together, like sheepe to a call, when they are to be foddered.

By this meanes I haue saued swarmes that forooke their Hiues for hunger, hiuing them againe in their owne Hiues: which proued good the same yeere.

CHAP. IX.

Of the remouing of Bees.

N remouing of Bees be carefull to auoid these fiue euills: 1. hindering of their swarming: 2. and of their Hony-gathering: 3. breaking of their Combes: 4. robbing: 5. and losse of Bees.

1.
*Five things to be
auoided in re-
mouing Bees.*

Remoue alwaies in a faire day, and, as neere as you can guesse, in settled weather. For when they are moued to another place, if it be withín their circuit or walke; they will flie to their old standing as soone as they are let goe, and hanker about it three or foure daies, and sometime longer: where if the cold wet catch them, many lose their liues. And if you remoue them out of their knowledge, then, as amazed in an vncouth place, they flie about for a while viewing the countrie, and searching for their old home: when they are wearie, they rest wheresoeuer: and if soule weather come vpon them, they are in like danger.

2.
*Remoue alwaies
in faire weather.*

For the time of the yeere, remoue not in the three still moneths, or in a fortnight afore or after, for losing the Bees. For if soule weather fall not, the very still cold will kill many, while they are straying abroad: and of those that returne, being not yet acquainted with the Hiue doore, some will fall short, some vpon the Hiue: where, while they rest panting, the cold chilleth them.

3.
Not in Winter.

Taurus, *Gemini*, and especially *Cancer*, are naught, for hindering the swarming, as well as their honie-gathering: and *Cancer* for danger also of breaking their soft Combes.

In *Leo* though the swarming time be past, and robbing time not yet come; yet there remaineth some honie-gathe-

4.
*Not in Summer. April
May
June
July.*

T

ring,

ring, and the Combes being then most weightie and most weake, the danger of breaking them is greatest.

To remoue in *Virgo* (when the Bees doe euer vse to be trying of masteries) *v.* is dangerous for robbing. For the *Indigene* or old inhabitants of the Garden (as they goe about prying for booties) finding new neighbours come among them, will be sure to visit them: and while the chiefe of their strength is stragling abroad, seeking for their old dwelling; they will bring the rest such cheere to their housewarming, as shall haply make the house too hot for them. And then they must be faine to goe along with them, and helpe to carrie their owne goods after them. *v. c. 7. n. 42.*

The fittest time is either in *Libra*, and the fore-part of *Scorpio*, that they may throughly know their new standing before the weather be too cold; or in *Aries*, and the later part of *Pisces*, that they may be acquainted with it before much gathering of Honie.

Neuerthelesse, if you haue Bees in other mens keeping, whose care and skill you mistrust; you were better to remoue them vnseasonably with some losse, than to hazard all by their ignorance and negligence.

But if you may choose, remoue in *Libra* onely: which is simply the best.

And for the remouing of a Swarme into an other Garden, (whether it be neere or far off) the only time is the euening or night next after the huiing: that he may be at his new standing, readie to worke, in the morning; and so lose no time, nor breake his first Combe in the carriage.

8.

The time of the day, and manner of remouing.

IN the euening, when you mean to remoue, an houre before sun-set prop vp the Hiue from the Stoole, with three Bolsters two or three inches thicke, that the Bees may ascend from the stoole. About halfe an houre after, hauing prepared an other stoole of the same height, and couered it with your Mantle, so, that the middle of the mantle be ouer the middle of the stoole; moue the stall with his stoole, if you may, a little aside; and set this couered stoole in his place: or if it cannot well be moued, then set the couered stoole close

Aug^t
v. c. 7. n. 31.

5.

The Autumne
and Spring are
fit times for re-
mouing.

6.

Libra, the best
moneth in all the
yeere.

7.

When to remoue
a swarme.

8.

The time of the
day, and manner
of remouing.

Sep^r
Oct^r
March
Feb^r

Sep^r

to the old stoole, either beside it, or before it. This done, lift vp the stall from his old stoole and set it vpon the new: and then wiping the Bees from the old stoole (if any remaine) with your Brush; either take the stoole away, or couer it with a cloth. And then if your new stoole be onely a planke without legs, borne vp by some other meanes; it is good to set it vpon the old. Within a while when the Bees are all in, knit the mantle at the foure corners ouer the top of the Hiue, so as the knots may not slip: and presently binde it to the Hiue about the middle slackly with a small line, and wrest it fast with a little sticke. And so is the stall readie to be remoued.

They vse commonly to make no more adoe, but after sun-set when the Bees are at rest, to lift vp the stall, and set it vpon a mantle spread on the ground, and so to binde it vp, leauing the Bees vpon the stoole (which in a good stall are not a few) behinde them. Which way, for such stalls as haue all their Bees vp in the Hiue, may serue well enough.

The best way to carrie your * Stall is vpon a Cowl-staffe betweene two.

* If you haue many to remooue; two lustie fellowes may beare two or three of them at once: but let them be all fast bound together.

If it be light, one may carrie it in his hand. But, howsoeuer, be sure it hang perpendicularly for feare of breaking the Combes; specially if you chance to remoue before *Libra*, when the wax is soft, and the lower parts of the Combes are heauie with Schadons, as well as the vpper with Henie.

When you haue brought the Stall home, you may let it stand bound as it is, all night in the house. The morrow, when the weather serueth, set him on his seat: but if it be foule the next day, keepe him still bound vntill it be faire. And then hauing loosed the line, and taken away the Mantle, cloome him vp presently: leauing for three or foure faire daies, a verie narrow entrance, for feare of robbing. For their new neighbours, euen now also (though not so eagerly as in *Virgo*) will proue them: and they will not so stoutly resist, vntill they be acquainted in the place.

9.
The vsual manner of remouing.

10.
Which is fit for poore stalls.

11.
How a good stall is to be carried.

12.
How a bad.

13.
What to do when they are brought home.

14.
And what when they are seated.

Sept



CHAP. X.

Of the fruit and profit of Bees.

Wherein is shewed first the *Vindemiation* or taking of Combes: secondly, the trying of the *Wax* and *Honie*, with the making of *Meth* or *Hydromel*: and thirdly, the singular vertues of them, for the vse and comfort of man.

The first part of this Chapter sheweth the taking of the Combes.

1.
The first kind of
Vindemiation.

2.
The best time for
killing Bees.

*Aug^r
Sept^r*

1.



He most vsuall, and generally most vsfull manner of taking the Combes, is by killing the Bees. For which the naturall and seasonable time is the latter part of *Virgo*, from the end of the *Dog-daies* vnto *Libra*: because till then the Combes are full of Schadons, which deceiue the Honi-men,

making the Hiue heauier and the Honie worse: (for the young Bees as well as the Coome corrupt the same, *Pulli & rubra sordes sunt mali saporis, & succo suo mella corrumpunt*) and after that time, the weather waxeth colder, not so fit for the running and working of the Honie: and the Honie is likely to decrease, either by their owne spending or by the spoiling of Robbers. Except in the heath-countries, where their gathering lasteth longer: for there they defer their taking vntill Mid-*Libra*.

Coll. 9. c. 15.
2.

3.
What Stalls are
to be taken.

V. c. 4. m. 3. l. 2.
32.

I.

Sept^r

At this time therefore consider with your selfe what Stalls you will kill. Swarmes that may liue, yeerlings and two yeerlings that are in prooffe, keepe for store. Likewise those that rid their Drones betimes, and specially those that draw out their young Cephens. v. Those of three or foure yeeres, which, by reason of their not swarming this last summer, are
ful

P. I. *Of the fruit and profit of Bees.*

C. 10.

full of Bees, lightly are fat, and therefore worth the taking : but they are also good for store, vnlesse the frequent Honi-dewes haue made them ouer fat. But those of that age which haue cast twice (except they were very forward and had beat away their Drones betimes) are not likely to * continue : and therefore are to be taken.

II.

* If you would haue any such to stand an other yeere , and not to bee weakened by his late casting; put it backe into the stocke againe. *v. c. 5. n. II.*

Likewise all poore swarmes vnworthy to be fed, *v.* and all light stocks whose stocks are decayed : *v.* For they will surely die. Neither is it safe to trust any after they haue stood five yeeres : vnlesse it be some speciall kinde of Bees, which cast often, and yet beating away their Drones betimes , doe still keepe themselues in heart. For such I haue kept nine or ten yeeres : and I haue heard of some of a greater age. Moreouer, all stalls of three yeeres old and vpward, that haue mist swarming two yeeres together : and especially those, that hauing lyen forth the summer before , did not cast this last summer : for such doe seldom after prosper. It is therefore better to take them now while they are good, than in a vaine hope of increase, to keepe them till they perish. Likewise if you haue any that are very fat and full of Honie, (as some yeeres some will be, euen downe to the Stoole) those are ripe and ready to yeeld their fruit. One such is worth three or foure. Take them therefore in their season : For wanting roome to breed in (their Cells being full of Honie) they will decay by little and little, and consume to nothing. And therefore , as in a wet hungry yeere you must keepe the best, so in a drie yeere, rich and plentiful in Honie-dewes , the worst are like to proue best for store.

v. c. 8. n. 4. **III.**

v. c. 8. n. 6. **IV.**

V.

VI.

VII.

VIII.

But generally take the best, and the worst. *In medio virtus.* And euer suspect those that rid not their Drones in time , *v.* Also those which the Robbers doe eagerly assault , *v.* and if their Combes bee once broken , *v.* delay not their taking.

IX.

v. c. 4. n. 30. **X.**

v. c. 3. n. 50. **XI.**

v. c. 7. n. 46.

Hauing made choice of your Stall to be taken , some two or three houres before * Sun-set dig a hole in the ground, as neere the Stoole as may bee, about eight or nine inches

4.

The manner of killing Bees.

deepe, and almost as wide as the Hiue-skirts : laying the small earth round about the brims. Then hauing a little sticke slit in one end, & shript at the other, take a † Brimstone-match 5. or 6. inches long, and about the bignesse of your little finger, and making it fast in the slit, sticke the sticke in the middle or side of the hoale; so that the top of the March may stand euen with the brim of the pit : and then set another by him drest after the same manner, if that bee not sufficient. When you haue fired these Matches at the vpper ends, set ouer the Hiue: and presently shut it so close at the Skirts, that none of the smoake may come forth. So shall you haue the Bees dead and downe in lesse than a quarter of an houre.

* That you may haue the euening and morning to finish your worke; while the store-Bees be at rest : which otherwise will trouble you in handling the Honie, if by any meanes they may come at you. But if the weather be cold enough to keepe them in, or the house bee close enough to keepe them out; you may take what time of the day you please.

† Matches are made of linnen rags and Brimstone, after the manner that maids make Sluts. First, melt pounded Brimstone : then take a linnen rag a foot long, and holding both the ends in one hand, dip the rest in the melted Brimstone, turning it vp and downe with a sticke : then taking one of the ends in the other hand, winde it a little; for hard winding makes it burne the worse. This cut in the middle maketh twaine.

8.
*Sundry meanes
to kill Bees.*

Next vnto Brimstone is the smoake of Bunt or great Pucfists, Tuchwood, or Mushrooms, vsed in like manner: but they are neither so quicke, nor so sweet. And for a need, some smother them with danke Straw, or Hay: but then the Honie will smell of the smoake. And therefore some drowne them in a Tub of water: but that hurteth the Honie, and doth the Hiue no good: and, besides that, many of the Bees being not quite dead, will sting them that handle the Honie.

6.
*The Bees being
dead, house the
Hiue.*

The Bees being dead, carrie the Hiue into the house, &c. See Part 2. If any Bees escape, they will die that night: but if you feare they will doe any harme, you may kill them presently vpon the Stoole.

7.
*The second kinde
of Vindemiation.*

ANother way to take the Combes is by Driuing the Bees. The manner of it is this. At Mid-summer, or within two or three daies after, in a faire morning an houre before Sun-
rising,

P. 1. Of the fruit and profit of Bees.

C. 10.

rising, lift the Stall from the Stoole, and set it vpright and fast on the ground in a Brake v. with the bottome vpward : and quickly couer it with an emptie Hiue, hauing first laid two spleets vpon the full Hiues bottome, that the emptie Hiue may stand the faster. Then wrapping a Mantle v. round about the Chincke or meeting of both the Hiues, and binding it fast with a small cord aboue and beneath, that a Bee may not get forth, clap the full Hiue or Remouer round about a good many times, pawling now and then a little betweene, that the Bees may ascend into the void Hiue. And when you thinke that most of them are driuen vp (which will bee about halfe an houre after) set the vpper Hiue or Receiver vpon the old stoole : B V T bee sure &c. as it followeth note 15.

8.
The time and manner of Driuing Bees.
V. c. 5. n. 24.
V. c. 5. n. 48.

Provided alwaies, before you goe about this businesse, that all the Salls in your Garden be first shut vp, lest they trouble you and your poore Bees.

This kinde of taking is much applauded at the first, because men thinke thereby to saue both Bees and Honie : but it fallerh out with them as it is in the Prouerbe, *All cometh, all loseth*. For the Honie is neither so good, as being not yet in season, and to bee corrupted with the Schadons, v. which can hardly be cleane taken from it; neither so much by almost the one halfe, sith there remaine yet six or seuen weeekes of Honie-gathering.

9.
This driuing of Bees vnprofitable.
10.
The Honie taken is little and naught.
V. n. 2.

And the Bees, as men forcibly driuen from their goods and children, are so discouraged, that they seldom thrue after it : specially those that haue swarmed; seeing their companie is least but small, and the after-brood is destroyed, which should haue supplied the roomes of them that are gone. And as for those that haue not cast, they might after that time yeeld a swarme, which would be better than the whole stall being driuen : and if they did not swarme at all, they would bee so much the better, either to take for Honie, or keepe for store. v. c. 5. n. 22.

11.
And the Bees driuen; few and poore.

This Driuing of Bees into leere Hiues being nothing so profitable as it seemeth, I doe rather commend vnto you the Driuing of one stall into an other : whereby the fruit of one

12.
Another kinde of driuing

istaken, and the liues of both are saued together.

And thus some are to be driuen in the latter part of *Virgo*, when they haue done breeding; *v.* and some in *Aquarius* or *Pisces*, before they begin to breed againe. *v.c.4.n.12.*

In *Virgo* such stalls onely are to be driuen, as are fit to bee killed: *v.* and that into yeerlings or two-yeerlings, which that yeere haue cast twice, and therefore haue few Bees least in them; but yet haue Honie enough. The manner of it is this. Hauing first placed these two stalls, the *Remouer* that is driuen and the *Receiuer*, as neere as may be one to another, and so let them stand together six or seuen daies, till they be well acquainted with their standings; when you see the weather faire and constant, late in an euening, about ten a clocke, set the *Remouer* fast on the ground in a Brake, *v.* with his bottome vpward, and the *Receiuer* vpon: and binde them close together, as in the former driuing. And then, by often clapping the *Remouer* betweene your hands about the space of a quarter of an houre (now and then pawling betweene) hauing driuen most of the Bees into the *Receiuer*, and so mingled them all together; let them so stand til the morning: In the morning about Sun-rising, if the weather bee faire; (other wise you must stay * longer) doe the like: hauing first shut and covered the other stalls. *v.c.5.n.25.*

* If the weather fit not the next day, you may safely stay till it doe fit; so that no Bees get forth in the meane space.

This done, set the *Receiuer* vpon the *Remouers* stoole: BVT, be sure to bolster him vp with three Tile-shards, that the driuen Bees may easily get into the Hiue on euery side. And then knocke the *Remouer* downe vpon a Tabletwo or three foot square, set close to the forepart of the stoole: and, by clapping of the Hiue, presently get as many of the Bees forth as you can. And forthwith carry the *Remouer* about a Pearch from the stoole: and there laying him downe, so that the Combes may lie edgelong, after a little while clap him twice or thrice, which will make many of the Bees to fly forth. Then remoue him to another place about the former distance, and there doe likewise: and so to an other, and an other, vntill few or no Bees will come forth by this meanes.

And

13.

At two times.

v. n. 2.

14.

1. Driuing in
Virgo.

v. n. 3.

15.

The manner of
driuing in *Vir-*
go.

v.c.5.n.24.

v. note 8.

P. 1. *Of the fruit and profit of Bees.*

C. 10.

And euer when you be come to a new place, and there haue got out some Bees ; leaue there the *Remouer*, and goe directly to the *Receiner*, and a little beyond : for the Bees will follow you, and thereby the sooner recouer the Hiue.

After this, having remoued the *Receiner* againe, and laid him with the Combes edglong as before ; stay till you see the Bees ascended to the highest part of the Combes in the Skirt of the Hiue: and then resting it on the edge of a *Kiuer*, and turning the Bees toward your readiest hand ; with two or three claps force them out into the Kiuer : and then suddenly carry the Hiue to an other place : and when you see more Bees ascended, haue it backe againe to the Kiuer , and there clap them out as before. This iterate as often as you see any store arise vnto the vpmost part of the Hiue-skirt. Which when they cease to doe , the Hiue is well nigh rid of his Bees. Betweene whiles, carrie the Kiuer to the stall, and knocke out the Bees vpon the Table. Then, hauing first loosed the spleets ends, take out the Combes, beginning at one side : and euer when you haue taken out a Combe, wipe off the Bees with a feather of a Goose wing into the Kiuer , and send it in, out of their sight. When the Combes are all gone, set the Hiue and Kiuer before the *Receiner*, that the Bees may take vp your leauings. As soone as they begin to bee quiet, take away the Bolsters , and cloome vp the Hiue very close, leaving the doore no wider than must needs bee. And when all is done , set open your other stalls : and carry the Hiue and Kiuer from among the Bees.

If you thinke there be not sufficient prouision for this double Stall in that single Hiue, bestow a full Combe or twaine, v: as need requireth, of the *Remouers* vpon them: and thus will your Bees delight and prosper in new Wax, which in old corrupt Combes would decay.

In *Aquarius* or *Pisces*, when you haue poised your Hiues, those that you finde by their lightnesse, vnlikely to indure the Spring for lacke of food, you may in like manner drive into such prouided Stalls , as haue fewest Bees : and so will those *Receiners* be much the better, and cast both the rather, and greater Swarmes. And if by chance, at any time after,

V

you

16.
How to helpe
those drinen
Bees that want.
V. 6. 8. 11.

17.
Driving in Pisces.

Jan^y or
Feb^y.

you finde a Stall decayed, thus may you saue them. Otherwise, if he be fit to be fed (*v. c. 8. n. 5.*) feed him, *v. c. 8. n. 15.* and 16.

18

How to reuiue
those that are
chilled in driving

v. c. 7. n. 63.

If, the weather being not warme, you finde some Bees chilled about the Hiue; fill your warme hands full of them, and anon they will flie away to their fellowes. *v.* And if haply any chance to pricke you, (which they will seldom doe) your hand will haue the more vertue to reuiue the rest.

This driving will not bee so troublefom as the former, because the poore Bees will easily change their hungry home for a place of plentie.

19.

A third kind of
Vindemiation.

20.

Exsection used
at two times.

EXsection or Castration, is a third kinde of taking: which is the cutting out of part of the Combes, part being least for the Bees prouision. And this was to be done at two times in the yeare, ** In ortu. & occasu vergiliarum.*

** Vergiliarum ortus* after *Columella*, l. 9. c. 14. is the eight and fortieth day from *Æquinoctium vernum*: after *Var.* the foure and fortieth: but then you must vnderstand that they accounted the *Æquinotium* to bee in the eight degree of *Aries*: (although *Hipparchus*, as *Columella* saith, had then found it to be in the first.) With vs the Cosmicall rising of *Vergilie* or *Phiadés*, being seuen starres in the necke of *Taurus* and in the foure and twentieth degree of that signe, is knowne to be in the third of May, the five and fiftieth day after the true *Æquinoctium*: which iumpeth with the account of *Columella*. And *Vergiliarum occasus*, being in the same degree of the opposite signe, is vpon the fift day of Nouember.

21.

What part to be
exsected is un-
certaine.

l. 9. c. 15.

But what part is to be taken, and what least, I finde it not determined. *Priore messe* (saith *Columella*) *dum adhuc rura pastionibus abundant, quinta pars fauorum; posteriore, cum jam metuitur hyems, tertia relinquenda est.* But *Varro* then requireth for their store two third parts; *Vt ne plus tertia pars eximatur mellis, reliquum hyemationi relinquatur.* And *Aristotle* because (as *Columella* granteth) *hic modus non est in omnibus regionibus certus*; doth not prescribe any certaine part, but leauing it to the discretion of the Bee-master, saith, *Cum favos apiarum eximunt, cibi tantum relinquunt, quantum per hyemem sufficiat: quod si satis sit, seruat eximen; sin minus, vel moritur ibidem, (si ne discedat hyems obstet) vel descendit sedem, si serenum nanciscitur.*

Hist. anl. 9. c.
40.

This way of taking, as appeareth, was anciently vsed in plentifull Countries, as *Greece, Sicily, Italy, &c.* But the former exlection, to wit, in the Spring, *Aristotle* no where mentioneth: and surely it must needs doe more harme than good, seeing the Hiues are then full of Schadons, which being spild, spill their swarming; and the store of Honie, which they seeke for, is then well spent.

And that also in the Autumne (which yet is the fitter time) seemeth no lesse vnprofitable than troublesome: because the Bees, in the Spring following, if they lacke not Honie to liue on, yet shall they lacke Cells to lay their young in, whereby their breed will bee hindered. And at neither time can it be done without much spoile of Bees.

But howsoever it faied with them, for our Country I take it to be verie vnfitting. And therefore I say the lesse of it: referring the curious Reader vnto the fifteenth Chapter of the ninth Booke of *Columella*, and vnto *Georgius Pictorius*, who in his foureteenth Chapter writeth thereof at large.

22.
Exfection ancient, but not profitable.

23.
Neither first.

24.
Nor second.

25.
Specially for our Country.

*The second part of this Chapter sheweth the trying of
(1) Honie and (3) Wax, with the (2) making
of Meth or Hydromel.*



THE Hiue being housed, v: squat it softly against the ground, vpon the sides, not the edges of the Combes: and loosing the ends of the Spleers with your fingers, and the edges of the Combes, where they sticke to the sides of the Hiue, with a wooden Slice, take them out one after an other. Then hauing wiped off the halfe-dead Bees with the Feather of a Goose-wing, breake the Combes presently, while they are warme, into three parts: the first sheere Honie and Wax, the second Honie and Wax with Sandarach, the third dry Wax without Honie. And that they may breake right where you would haue them, marke the places deeply with the edge of your knife, But first prouide necessarie Instruments, as Panns, Kiuers, Tongs, wide Sieues, or Wheat-ridders, a Slice, Kniues, Straining-bagges, a Tub or Kieue, with a Tap, and

V.p. 1. n. 6.

1
The Combes to be divided into three parts.

2.
Necessarie Instruments being first provided.

Tap-waze, a hairen Clensieue, * Honie-pots, Wax-moulds, Meth-barrels, &c.

* Treene vessels, if they leake not, are better than earthen : which if they breake not by some mischance, the verie force of the Honie is able to cracke.

These things prouided, take out the first Combe : and setting the Honie-end in a Ridder, resting vpon Tongs ouer a cleane Pan or Kiuer that will not leake ; marke and breake off the first part for Honie, and leaue it there : then going to the Kieue fitted with a Tap and Tap-waze, marke and break off the second part for Meth or Hydromel, and leaue it there : and lay the third part aside for Wax. Then taking out an other Combe doe the like, &c. till the Ridder be full.

If you meane to make two shoots, and so two sorts of Honie ; let your assistant presently cut the first part into thin slices, and, without any more adoe, let the Honie runne his first shoot. But this is to be vnderstood of the darker part of the Combes : for the pure white Cells in the vpper part (which containe nothing but pure white, or yellowish Liue-Honie) you may as well crush betweene your hands : and this will be fine ordinarie Honie.

But if, for some speciall vse, you would haue some Honie yet more fine and pure ; then onely slice the purer part of the Combes, being yet warme with the temperate heat of the Bees, and so let the pure Liue-honie runne through a cleane Clensieue. For, *In omni melle quod per se fluit, (ut mustum oleumq.) appellaturq; acetum, maxime laudabile est.* Of all Honie that which runneth of it selfe, (as new Wine and Oile) and is called * *Acetum*, is most commendable.

This *Acetum* or finest Nectar, for his incorrupted puritie, is called Virgin-Honie. *Quod è favis sponte primum defluit, virginum mel vulgo appellatur.* Plantius in Fernel. l. 7. de Meth. Med.

Whereof there are two sorts. The right Virgin-honie is of a Swarme: *v.* that which is of an old Stall, though it runne first and of it selfe, and were gathered the same yeare ; yet being partly mixt with other, and laid vp in corrupter vessels, not in the pure Virgin-Cells, *v.* is but a second or bastard

3.
The dressing of
the first part for
Honie in two
shoots.

4.
The first shoot
for fine ordinary
Honie.

5.
O: for Virgin-
Honie, which is
most fine.

Nat. hist. l. 11.
c. 15.

6.
Two sorts of vir-
gin honie.
V. c. 6. n. 29.

V. s. 6. n. 14.

bastard Virgin-honie, rather to be called the finest ordinary.
v: c. 6. n. 30.

* *Aceton* without drosse or dregges. For *κρίτος* doth properly signifie
Cubile a Bed, and is here vsed for Dregges, because the Dregges of Wine
 and Oyle and such liquors, are as a Bed or *Ground* whereon they lye: in
 which respect we also call them *Lees* or *Grounds*. But this *Metaphor* to the
 Dregs of Honie is somewhat *Catachrestical*: because the Honie beareth his
 Drosse, and not the Drosse the Honie.

But the hard *Corne-honie* *v:* in the top of the Combes,
 specially if there be any store, because it will not runne, you
 must either wash into the warme Meth-liquor, or melt it with
 the Cells on a soft fire, or in a hot ouen, or in *Balneo Mariae*,
v: and so shall you haue the Honie by it selfe, and the Wax
 swimming about it: which you may take away when it is
 cold. But so this good Honie will become but course: and
 therefore put it to the second shoot.

Hauiug now taken so many Stalls as you can dresse this
 euening, *v:* take the rest as soone as after as you may, *v:* and let
 the Honie be all tryed out, before you soake the second part.

The Hiuies being rid, carrie them into your Garden (a
 Peach at least from any Stall) for the Bees to take vp your
 leauings: *v:* And haue still by you a pail of faire water to
 wash your hands in: which water must be for the Meth.

When the Honie hath runne what it will; put this first
 shoot, whether it be ordinarie or Virgin-honie, into a pick-
 ed bag, to straine it into his pot by it selfe. And let the re-
 minder bee crushed with warme hands that it may runne a-
 gaine for a second sort, which is likewise to be strained. That
 which is least at the last, in the Bags, Rdders, and else-where,
 wash into the second shoot of the Must *v:* to giue it his iust
 strength.

The weather being not warme, set the Honie by the fire
 to helpe the running.

Otherwise if you be in haste, and meane to make but one
 sort of Honie; first slice off the vpper part of the Combe
 (euen as much as you finde void of Sandarach) for Honie:
 and presently let your assistant werke all together with
 warme hands, and so make but one shoot, which afterward

7.
*Corne-honie got
 out by water or
 fire.*

V. c. 6. n. 27.

Ch. 28.

V. p. 3. n. 7.

*V. * in p. 1. n. 4.*

V. Ibidem.

V. c. 8. n. 13.

8.
*The second shoot
 for course Honie.*

V. n. 17.

9
*The dressing of
 the first part in
 one shoot.*

V. n. 6.

is to be strained. *v.* Then going to the Kiue, slice off the second part (euen all that hath Honie) for Meth. And set aside the drie part for Wax. And thus will your Honie be good enough: and such as, compared with the vulgar Honie, may well goe for fine.

10

The vulgar Honie grossly handled.

For the Honie-men (because thus to cut each Combe into diuers parts, and diuersly to dresse each part, would be too tedious to them that haue much to doe) doe vse to make but oneworke of all; with a thin light shouell pounding and compounding the Honie, and Wax, and Bees, and Schadons, and Sandarach all together. And then putting this confused stufte into a strong hairen Bag, doe with a Presse or Wrenge violently wring out all that will runne. And this, hauing first his season of heat ouer the fire, they put vp into barrells or other vessels to worke: whereby though it bee much purged, yet can it not choose but participate the nature and taste of those things wherewith it was so thoroughly infected. This done, the Pulseremaining in the Bagge they slice with a shredding-knife into a Trough or other vessel, and all-to-wash it and mash it in faire water for Mede: which, when the sweetnesse is all washt out, being crushed dry, the balls they try for Wax.

11.

The working of Honie, and how to helpe it.

Honie being put vp warme into pots, will in two or three daies worke vp a skum of Wax, Honie, and Drosse together: which being taken off with a spoone, put to the second part. In cold weather the Honie will not worke well without the heat of the fire. The best way is to put it into an ouen after the batch is forth, but not before you can abide to hold your hand vpon the bottom, for feare of ouer-heating the Honie. The next way is to stirre it in *Balneo Maria*, *v.* till it be all warme.

V. p. 3. n. 7.

12.

Diuers Countries yeeld diuers kinds of Honie.

P. c. 6. n. 31.

The differences and degrees of Honie in goodnesse, are as well naturall as artificiall. For as it is made better or worse by the ordering and handling of it; so is it in it selfe better or worse, according to the different condition of the soile where it is gathered. *v.* The Champion-honie is accounted almost twice as good as the Heath-honie, although they bee ordered both alike. For when the vulgar champion is sold
for

for nine pound the Barrell, the like Heath-honie will scarce yeeld fiue. And generally the finer the Wheat and the Wooll is, the finer is the Honie of the same Region: v. and therefore no maruaile that the course Heath, hath as course Honie as Wooll.

V. p. 3. n. 4. &
c. 6. n. 31.

Good Honie, when it hath wrought, hath these properties whereby it is knowne: It is cleere, odoriferous, yellow like pale gold (but right Virgin-honie is more crySTALLINE at the first, v.) sharpe, sweet, and pleasant to the taste, of a meane consistence betweene thicke and thinne, so clammie, that being taken vp vpon your fingers end, in falling it will not part, but hang together like a long string, as that vseth to doe which is clarified. So doth *Iacobus Syluius* describe the best honie, *Mel optimum sit purum adeo ut totum perluceat, odorum, flavum, acerrimum, dulcissimumq; gustanti, & jucundissimum, consistentia nec crassa nec liquida, sed tam sibi coherens ut continuitatem suam, quasi linea longissima, non intercisum seruet, si digito attollitur: idem coquendo paucam spumam emittit.* And *Gail. Planius*. *Mel probum est quod inter crassissimum & tenuissimum, sit mediocre, sapore dulcissimum, & acerrimum, simulq; dulcedinis sensum inferens & vellicatu pungens linguam, colore pallidum aut subrutulum, & pellucidum, odoratissimum & recentissimum, quodq; sublatum non facile obsequacem lentorem abruptatur, pondere grave, & inter coquendum spuma parum emittens.* In *Fern. 1. 7. de Oxymiel.*

13.
How to know
good Honie.
V. c. 6. n. 29.

This good Honie, specially that part which is in the bottom, will in time grow (like vnto Corne-honie, v. in the vppermost part of the Combes) hard and white: such as is the Honie of * *Spaine* and *Narbona* in *France*, which is accounted the chiefeft, and compared with that of † *Hymettus* and *Hybla*. But this is to be vnderstood of ordinarie Honie: for the pure Virgin Honie will bee neither hard nor white; but changeth his liquiditie and crySTALLINE cleernesse v. into a thicke softnesse, and bright yellow colour.

14.
Good Honie with
standing waxeth
hard and white
V. c. 6. n. 27. &
28.

V. c. 6. n. 29.

* *Quin Hispani & Narbonenses mittunt albissimum & longe praestantissimum, idmq; praedurum.* Sylu. l. 1. med.

† *Nec Aetico aut Hybla inferius, cum regionis temperatura, & thymi larga luxuries vtrobiq; consentiam.* Idem l. 2.

15.
The best of the
Honie is in the
bottome.

And alwaies the best part of all Honie is that which is lowest in the vessell. * For as the best oyle is in the top, and the best wine in the middle; so the best Honie is in the bottom. *Mellis exilior pars fluitat, qua eximenda est: pura vero & valida subsidit.* Arist. Hist. ani. l. 9. c. 40. *In imo vase quod fudit, supernatante pretiosius.* Plan. in Fern. l. 7. de Oxymerc.

* As among liquors Oyle excelleth in lightnesse, and Honie in heavinesse; so in both that part is best, which excelleth in his excellling quality: and Wine being of a midling weight, is best in the middle.

The weight of these three, one to an other, hath this proportion. Oile is not so heauie as Wine by one tenth part: for if you fill a measure with Wine, and diuide it into ten parts; the same measure of Oile is no heavier than nine of them. And Honie is heauier than Wine by the halfe: for if you fill a measure with Wine, the same measure of Honie will weigh that and halfe so much more. *Quoniam Oleum leuius est Vino parte * nona, Mel verò grauius Vino parte dimidia; quacumq; mensura capit Mellis uncias quindecim, capit Vini uncias decem, & Olei novem.* Fern. Meth. l. 4. c. 6.

* Ceu potius
decima.

16.
The dressing of
the second part
for Meth.

The second part of the Combes, appointed for Hydromel or Meth, you must first rid of the sandarach as neere as you can: cutting off that which is by it selfe, and * picking out that which is among the Honie: all which refuse, because of the wax that is with it, cast to the third part.

* If thus to part the Honie and the drosse shall seeme but a tedious piece of worke; you may leaue it vnto them that are expert in it. *V. c. 8. n. 13.* And make your Meth of more meete Honie.

17.
How to make the
Meth-liquor in
two shoots.

And then, when the Honie is all strained, and put vp; lay this second part a soake in milk-warne faire water, (that which commeth from heauen is counted best) in the Kiue or Tub with his Tap and Tap-waze. But first wash the drie Combs therein, if any Honie chance to sticke vnto them in the handling: then scrape and wash the Spleets, and lay them aside out of the way: and lastly, crush all the Pulse well betweene your hands, specially that which lieth lowest, and stirring is about all-to-wash it: and so let it steepe all that night.

In the morning let this first shoot of the Must or Woort, being made of his iust strength, *v:* runne through the Tap-Waze. The Pulse which remaineth, when you haue squeezed out the liquor, breake and wash in fresh warme water in the Kiue, for a second shoot. When it hath lien a while in soake, first take those parcels that swim, and squeezing out the liquor * betweene your hands, lay the balls aside to the third part : (but let your Bees haue the perusing of them) then take vp those that lie in the bottome, and doe likewise : which because they haue most Honie, you must take most paines in washing and crushing them. And while this is doing, let this small liquor runne into a vessell by it selfe. When it is out, wash into it all the remainders of Honie *v:* adding some course Honie, if need be, to make it of his iust strength : *v:* and then let both shoots run together through a † Clensieue into the Kiue againe. And thus shall you lose none of your Honie.

The first shoot.
V. n. 19. & 24.

The second shoot.

V. n. 8.

V. n. 19. & 24.

* If there be much Pulse, vse a presse, when the liquor hath runne what it will.

† The Clensieue is vnto the Tap-waze for Methe, as the Strainer to the Ridder for Honie. *v:* n. 7.

Meth or *Hydromel* is of two sorts : the weaker and the stronger, *Mede* and *Methaglen*.

For the making of *Mede*, if the Must, when it is all together, be not strong enough to beare an Egge the bredth of a two-pence aboue it, then put so much of your course Honie into it as will giue it that strength : which is sufficient for ordinary *Mede*. And afterward vntill night, euer now and then stirre it well about the Kiue.

18.
Two sorts of Hydromel, Mede and Methaglen.

19.
When the liquor is strong enough for Mede.

20.
What proportion of water to honie.

If you would make a greater quantitie, then must you adde a proportionable measure of water and Honie : namely six of that for one of this. The learned Physitian *Mathias de Lobel* requireth this proportion of six to one to be boyled to foure. His receipt of Spices is Cinamom, Ginger, Pepper, Graines, Cloues, *Ana* two drammes. The second morning put to the Must the scum of the Honie, stirre all together, and stoope the Kiue a little backward. When it

hath setled an houre or two, draw it out to be boiled. And when you see the grounds beginne to come, stay; and let the rest (saue the very thick grounds, which cast to your Bees) runne into some vessell by it selfe: which, when it is setled, peere our into the boiling vessell through the Censieue, and cast out these grounds also into your Garden.

21.

How, and how
long the Must
must be boyled.

This Must being set ouer a gentle fire, when you see the Scum gathered thicke all ouer, and the bubbles at the side begin to breake it; hauing slackt the fire, to cease the boyling, skim it cleane. Then presently make a fresh fire to it: and when you see the second skum ready, hauing * slackt the fire againe, take it quickly away: then make to it the third fire, and let it boyle to the wasting of a fourth part, if it bee made of the washing of Combes; and to the wasting of one fift or sixt part, if it be made of cleane Honie: not ceasing in the meane space to take off the Scum as cleane as you can. One houres boyling may suffice: but if the Meth bee of cleane Honie, it may as well be done in halfe the time.

* In stead of twice slackt the fire, you may twice coole the boyling Must with cold Must reserued: or else be sure that it doe boyle all the while onely at one side, and not all ouer.

22.

The receipt of
Spices.

After all this, put in the spices, viz. to a dozen gallons of the skimmed Must Ginger one ounce, Cinamom halfe an ounce, Cloues and Mace *Ana* two drams, Pepper and Graines *Ana* one dramme, all grosse-beaten, the one halfe of each being sowed in a bag, the other loose: and so let it boyle a quarter of an houre more.

The end of boiling is throughly to incorporate the Boorne and the Honie, and to purge out the drosse: which being once done, any longer boiling is vnprofitable; as diminishing more the quantitie, than increasing the strength and goodnesse of the Hydromel.

23.

How the Must is
to be vsed when
it is boyled.

As soone as it is boiled enough, take it from the fire, and set it a cooling: the next day, when it is setled, poure it out through a Haire-siue or linnen bag, into the Kine: (reseruing still the Lees for the Bees) and there let it stand couered three or foure daies till it worke; and let it worke two daies.

Then

Then draw it through the Tapwaze, and tun it into a Barrell scalded with Bay-leaves, making the Spice-bag fast at the tap. If there remain much grounds, you may purifie them by boiling and skimming againe as before : but this will neuer be so good as the first : and therefore you may put it by it selfe, or with some remainder of the best, into a small vessell to spend first, before it be soure. If the *Meth* be not much, you may tun it the next day, and let it worke in the Barrell. Being tunned, it will in time be couered with a mother : which if, by iogging the vessell, or by other meanes, it be broken ; the *Meth* will turne soure. But so will it make excellent Vineger, and the sooner, if it be set in the Sun : which the longer you keepe, the better it will be.

Methaglen is the more generous or stronger *Hydromel* : being vnto *Mede* as *Vinum* to *Lora*. For it beareth an Egge the breadth of a groat or six pence : and is vsually made of finer hony, with a lesse proportion of water ; namely, foure measures for one : receiuing also in the composition as well certaine sweet and holsome hearbs, as also a larger quantitie of spices : namely, to euerie halfe Barrell or sixteene Gallons of the skimmed Must, Eglantine, Majoram, Rose-marie, Time, Winter-sauourie, *ana* halfe an ounce ; and Ginger two ounces, Cinamom one ounce, Cloues and Mace *ana* halfe an ounce, Pepper, Graines, *ana* two drams, the one halfe of each being bag'd, the other boiled loose. So that whereas the ordinarie *Mede* will scarce last halfe a yeere ; good *Methaglen* the longer it is kept, the more delicate and holsome it will be : and withall the cleerer and brighter, according to the *Etymon* of the name. v. * in p. 3. n. 23.

He that listeth to know the many and sundry makings of this holsome drinke, must learne it of the ancient *Brittaines* : who therein doe passe all other people. One excellent receit I will here recite : and it is of that which our renoumed Queene of happie memorie did so well like, that she would euerie yeere haue a vessell of it.

First, gather a bushell of Sweet-briar-leaves, and a bushell of Tyme, halfe a bushell of Rose-marie, and a pecke of Bay-leaves. Seeth all these, being well washed in a Furnace of

^{24.}
The making of
Methaglen.

^{25.}
The Queenes
Methaglen.

faire water : let them boile the space of halfe an houre, or better : and then poure out all the water and herbes into a Vate and let it stand till it be but milk-warme : then straine the water from the herbes, and take to euerie * six Gallons of water one Gallon of the finest Honie, and put it into the Boorne, and labour it together halfe an houre : then let it stand two daies, stirring it well twice or thrice each day. Then take the liquor and boile it anew : and when it doth seeth, skim it as long as there remaineth any drosse. When it is † cleere put it into the Vate as before, and there let it be cooled. You must then haue in a readinesse a Kieue of new Ale or Beere, which as soone as you haue emptied, suddenly whelme it vpside downe, and set it vp againe, and presently put in the *Methaglen*, and let it stand three daies a working. And then tun it vp in Barrels, tying at euerie Tap-hole, by a Pack-thread, a little bag of Cloues and Mace, to the value of an ounce. It must stand halfe a yeere before it be drunke.

* If you maruell that so great a quantitie of water is required ; it is partly because of the goodnesse of the Honie, which being pure and fine goeth further than ordinariē : and partly that it may haue the longer time in boiling, before it come to his strength. And therefore some will haue eight parts of water to one of Honie : but then they boile it so much the longer.

† The third part at least being wasted.

26.
*The dressing of
the third part
for Wax.*

27.
*First boile it
with water.*

28.
*Then straine it
by pressing.*

THE third Part consisting of wax and drosse, set ouer the fire in a Kettle or Caldron that may easily containe it : and poure into it so much water as will make the wax to swim, that it may boile without burning : and for this cause, while it is seething with a soft fire, stir it often. When it hath sod a while and is thoroughly melted, take it off the fire, and presently poure it out of the Kettle into a Strainer of thin strong Linnen, or of Twisted-haire, readie placed vpon a Wrenge or Presse : and then winding and doubling the necke of the Bag, lay on the Couer and presse out the liquor as long as any Wax commeth into a Kiuer of cold water, but first wet therewith both the Bag and the Presse, to keepe the Wax from sticking. At the first commeth forth most water, at the last most drosse, in the middle-most Wax.

The

The Wax waxing hard, make into Bals, squeezing out the water with your hands. When you haue thus done, presently while they are warme breake all the Balls in (2.) small Crumlets into a Skiller or Kettle set ouer a (3.) soft fire. While it is melting, stir it and skim it with a spoone (4.) wet in cold water: and as (5.) soone as it is melted and skimmed cleane, take it off. And hauing prouided the (6.) mould, first (7.) warme the bottome, specially if the cake be small, and (8.) besmeare the sides with Honie, and then instantly poure in the wax (9) (being as coole as it may run) through a linnen straining-bag. When you come neere the bottome, peere it gently till you see the drosse comming: Which straine into some other mould by it selfe. And when it is cold, either trie againe, or hauing pared away the bottome, reserue it, as it is, for some vse.

When the Wax is in the mould, if any froth yet remaine vpon it, blow it together at one side, and skim it off lightly with a wet spoone.

This done, set not the cake abroad, or where it may coole hastily vpon, but in the warme house: and if it be great, couer the mould with a Platter, as close as you can, to keepe the top from cooling, till the (10.) inward heat be alayed: and so let it stand, not mouing the mould till the cake be cold. If it sticke, a little warming of the vessell or mould will presently loose it: so that it will slip out.

(1.) So will they breake the smaller with lesse labour. (2.) That the wax may melt the sooner, and all together. (3.) For a rash fire will burne it, and change both colour and qualitie. (4.) That the skum sticke not. (5.) For ouer-heating will discolour the Wax, turning the bright yellow into a darke or reddish colour, not so commendable in Wax: for thereby it is knowne to haue lost of his samtlesse and sweetnesse, and to be the worse for all vses. (6.) Which may be a bason or other vessell of metall or earth, bigger vpward than in the bottom. (7.) Lest the Wax first poured in (which is the best) being presently cooled, lie beneath the drosse. (8.) To keepe the Wax from sticking to the sides of the mould, and consequently to helpe saue the Cake from cracking. For Wax shrinketh in cooling, as new walles in drying: and therefore if the Cake sticke not, it shetketh together from the sides, and so is lesse than the mould, and whole: but if it sticke fast to the sides, then must it needs cracke, one part shrinking from another (specially if it coole hastily vpon) as it happeneth commonly in great Cakes: For small ones, whose inward heat is

29.
Next make the
Wax into Balls

30.
Last of all melt it
and cast it in a
mould

31.
And keepe the
cake from
cracking.

32.
How to know
good Wax.

Silv. de med.
simpl. delectu.
lib. 1.

slayed by that time the vpper part beginneth to harden, are not so subiect to cracking. (9.) & (10.) For the great heat of the Wax doth cast vp the vvarrie vapours mingled with it: Which so long as the vpper part of the Cake continueth liquid, doe easily passe: but when it is hardened, and the Wax yet feruent hot beneath; the vapours being violent through the inward heat, must needs either cracke the Cake, or heave it and make it hollow, or both, specially if it be verie great: for then will the heat be both stronger and longer: but this is helped by not sticking. *v. ante num. (8.)*

The properties or tokens of good Wax are (1) most yellow, sweet, fat, (2) fast or close, (3) light, (4) pure, and void of all other matter. *Cera sit flavissima, odorata, pinguis, coacta, levis, pura, & aliena omni materia carens.*

(1) That is most light yellow, fardest from red, and nearest to white: for as in gold the deepest, so in Wax and Hony (*v. n. 13.*) the palest yellow is best: yea the pure Virgin-wax at the first is white. *v. c. 6. n. 14.* (2) not hollow as the froth is. (3) For Wax, like Oile, is best in the top, as Hony in the bottom (*v. n. 15.*) except the hollow froth, which is to be skimmed away. *v. n. 30.* (4) and therefore the bottom, vnto which the drosse doth descend, is not good.

The third part of this Chapter sheweth the singular vertues of
(1) Honie, (2) Methe, and (3) Wax for
the use and comfort of man.

I.
The properties
and vertues of
Hony.



Honie is (1) hot and dry in the second degree: it is of (2) subtrill parts, and therefore doth pierce as Oile and (3) easily passe into the parts of the bodie: It hath (4) a power to cleanse, and some sharpnesse withall, and therefore it (5) openeth obstructions, it (6) cleereth the brest and lights of those humors, which fall from the head to those parts, it (7) looseth the belly, (8) purgeth the foulness of the bodie, and (9) pro-uoketh Vrine, it (10) curteth and casteth vp Flegmatike matter, and therfore sharpneth the stomackes of them which, by reason thereof, haue little appetire, (11) it purgeth those things which hurt the cleerenesse of the eyes, (12) it nourisheth verie much, (13) it breedeth good bloud, (14) it stirreth vp and preferueth naturall hear, and prolongeth old age (*reade the note*) (15) it keepeth all things vncorrupt, which are put into it, and therefore (16) Physisians doe temper therewith such medicines as they meane to keepe long:

long: (17) yea the bodies of the dead, being embalmed with Hony, haue beene thereby preserued from putrefaction. (18) It is a soueraigne medicament both for outward and inward maladies; (*reade the note.*) (19) It helpeth the griefes of the jawes, (20) the kernels growing within the mouth, (21) and the squinancie or inflammation of the muscle of the inner gargil, for which purpose it is gargarized, and the mouth washed therewith: (22) it is drunke against the biting of a Serpent (23) or mad Dog: and (24) it is good for them which haue eaten Mushromes, (25) or drunke Popy; against which euill yet, Rosed-hony is taken warme. (26) It is also good for the falling sicknesse, and better than Wine, because it cannot arise to the head, as the Wine doth. (27) Lastly, it is a remedie against a surfet: for they that are skillfull in physicke, when they perceiue any mans stomacke to be overcome, they first ease it by vomit: and then, to settle his braine, and to stay the noisome fume from ascending to his head, they giue him Honie vpon bread. In respect of which great vertues (28) the right composition of those great Antidotes, *Treacle*, and *Mithridate* (although they consist, the one of more than fiftie, the other of more than lixtie Ingredients) requireth thrice so much Honie as of all the rest. All which premisses considered, no manuell though the wise King said, My sonne eat Hony, for it is good: *Prov. 24. 13.* that the holy Land is so often and so much commended for flowing therewith: *Exod. 3, 8. 13, 5. 33, 3. Lev. 20, 24. Num. 13, 27. Dent. 8, 8.* and that the Eternall *Immanuel* did vse it for his food. *Isa. 7. 15. Luk. 24, 43.* Yea Honie, if it be pure and fine, *v.* is so good in it selfe; that it must needs be good, euen for them whose queisie stomackes are against it. But indeed the vulgar hony may well be disliked, as being flurishly handled, & much corrupted with stopping, and Bees both young & old, *v.* & some with other mixtures also.

20
Against both
outward and
inward griefes.
Synanche.
Angina.

V. p. 2. n. 4. & 6.

V. p. 2. n. 10.

(1) Galen. de simpl. med. facult. lib. 7. (2) tenuium partium. Simeon Seth. (3) facile distribuitur. Matthias de Lobel. (4) detergendi vim. Galen & Seth. (5) Lobel. (6) Wikerus, & Freitagus. (7) Seth. & Freitag: & Plantius in Fernelium de Syrupis. (8) Seth. (9) Seth. & Pictorius. (10) (11) Lobel. (12) (13) Freitagus. (14) calorem nativum suscitatur & tuctur, & longam prorogat senectam. Plant. loco supr. citato.
Exempla

Exempla citat *Franciscus Valerius Medicus* locorum com. lib. 3. cap. 13. *Antiochus Medicus*, & *Telephus Grammaticus* annosi senes Attico melle ex pane alicare excepto plurimum utebantur. Quos *Galenus* l. 5. de Sanit. tuenda cum exempla vite senum, quibus esset optimè victus ratione illesa senectus, proponit. Melle itaque sensibus plurimum utendum consulo, si modò sue ipsorum valetudinis rationem habere velint. Et l. 3. c. 19. Melli vim proferenda vite, senectusq; longæva agenda, authores affirmant: *Democritus Philosophus*, qui melle oblectatus assidue, in annum centesimum nonumq; sati diem disulit, interrogatus, ut scribi *Athenæus*, quomodo quispiam sanus vivere possit. Si exteriora oleo, inquit, interiora melle irriget. Erat etiam *Pythagoricorum* cibus panis cum melle. *Aristotenus* eos sine morbo vivere posse asserit, qui ea semper in prandijs comedant. Licet multum *Cynios* vivere scribit, quia, apud *Sardonem* habitantes, melle semper vescuntur. Nec immerito, quoniam alimentum sic familiare, & naturæ amicum, dulcedine quam possidet jucundum: obstructions insuper eximat, insarctique liberet, ventrem molliat, corporis habitum calefaciat, urinam ciet, thoracem pulmonesq; iuret, tonsillis & uvæ medeatur. Quæ cum tanta possit, vel *Dioscoridis* & *Galen*i testimonio haud immerito producenda ætati vitæq; progande idoneum esse medicamentum asserimus. (15) *Seth* & *Plin. hist.* l. 7. c. 3. (16.) *Pictorius*. (17.) *Claudius Cæsar* scribit *hippocentaurum* in *Thessalia* natum eodem die interiisse. Et nos principatu illius allatum illi ex *Ægypto* in melle vidimus. *Pl. hist.* l. 7. c. 3. (18) *Mel* calidum siccumque ordine secundo aperit, putredini obssit, siccit, deterget, expurgatque meatus & ulcera. *Fern. Method.* lib. 6, c. 12. Item, *Mel* & *saccharum* potionibus admista vires naturales in morbis sopitas & languentes excussant & erigunt: naturæque calorem qui solus morbos concoquit & mitificat, recreant: crassaque extenuando, viscosa extergendo, & obstructa expediendo purgationes quamfacillimas præstant. *Plantius* in *Fern. de Syrupis*. Item, *Mel* abstergerendi vim habet, ora vasorum aperit, humores evacuat, quæ ratione in sordida ulcera sinusque commodè infunditur, decoctum atque impostum abscedentem carnem glutinat, medetur lichenibus, impetigini coctum cum liquido alumine & illitum. Item aurium sonitui & dolori cum fossili sale trito tepidum instillatur: lentes & sæda capitis animalia illitum necat, oculorum caliginem discutit, faucibus, tonsillis, angina collutum gargari & zatumque medetur, urinam ciet, auxiliatur tussi; contra haustum meconium cum rosaceo calidum assumitur, adversus venenarum fungorum & rabiosi canis morsus linctum aut potum proficit: crudum tamen alvum inflat, tussim laceffit: & ea de re desumptato utendum. *Dioscorid.* lib. 2, cap. 101. (19) (20) (21) (22) (23) (24) (25) *Pictorius*. Mellis natura talis est, ut putrescere corpora non sinat; faucibus, tonsillis, angina, omnibusque oris desiderijs utilissimum, arescentique in febris lingua, *Pl. hist.* l. 23. c. 24. (26) *Lobel.* (27) *Pict.* (28) *Fernel. Method.* l. 7.

3.
For whom Hony
is best.

℞. (24) in note
1.

Hony is most fit for (1) old men, v. for women and children, for such as are rheumaticke and flegmaticke, and generally for all that are of a cold temperature. (2) To young men, and those that are of a hot constitution it is not so good, because it is easily turned into choller: and yet *Lobel* saith wee know that Hony taken fasting doth much good vnto some natures,

natures, which haue hot livers : and in this point he prefereth our English Honie. *Minus* (saith he) *speciosum ac delictatum Anglum : sed quibusdam praesertim saltribus & pascuis, ubi lana commendatur, v. lectum, biliosa excrementa inferius extergendopellit, & aciei oculorum prodesse putatur.* So that he seemeth to say, that our honie is hurtfull to none ; because it purgeth that euill humour, which other Hony, in some bodies, is thought to breed. But the Prouerb saith, *Too much of one thing is good for nothing* : and the Wis-man in his Prouerbs, *It is not good to eat much Honie.* Prou. 25, 27. and in the 16, 6. *Hast thou found Honie ? eat so much as is sufficient for thee* : &c. For all Hony often and immoderately taken (3) causeth obstruction, (4) contrarie to his naturall qualitie, and so in time (5) breedeth the scab.

4.
English Hony.
P. p. 2, n. 11.

5.
Too much Hony
unholysome.

(1) (2) Galen. l. 4. simpl. med. dist. 3. c. 5. Item Seth. Pictorius, & Freitag.
(3) Wikerus & Freitagius (4) vide (8) & (18) supra. (5) Lobel.

Raw Hony doth (1) more loose the belly, (2) causeth the cough, and (3) filleth the entrailes with winde, specially if it be of the courser sort. Being boiled it is (4) more nourishing, (5) lighter of digestion, and (6) lesse laxatiue, also (7) lesse sharpe and absterfory : for which cause they vse it (8) to knit together hollow and crooked ylcers, and likewise (9) to close other disioined flesh. It is also good against the (10) pleurisie, against the (11) phthisis, and all other diseases of the lungs.

6.
The differens
operations of raw
& boiled Hony.

(1) (2) (3) Freitag. Pictor. & Wikerus. (4) Freitag. & Wiker. (5) Wikerus. (6) Pictorius. (7) Gal. & Seth, & Fernelius Methodi. lib. 6. c. 12. *Crudum cocto & despumato detergentius quidem multo est & mordacius : sed eo minus agglutinat.* (8) ad firuum glutinationes, Seth. sinuosorum ulcerum, Galen. (9) (10) (11) Pictorius.

Honie is clarified by boiling : and that either by it selfe, or else with a fourth part of water, or other liquor. But alwaies in boiling skim it, that it may be pure.

7.
Two waies to
clarifie Hony.

By it selfe you must boile it vntill it will yeeld no more skum, (which will be about halfe an houre) and that with a very soft fire, or in a † double vessell ; lest, by ouer-heating, it get a bitter taste, and lest it suddainly run ouer and flame.

* The right skum, which is drosse, is short and brittle: which when it is cleane taken away, the force of the fire will cause the very Honie to rise vp like a skum: but that will then be tougher and more clammy than the drosse skum, and so will all the rest be, when it is cold, as being over-boiled: therefore be sure to take it off in time.

† is a vessell set in a vessell of boiling water, called, *Balneum Marie*, which is best.

V.Fernel. l.4.c.
15.

* Lesse white
may serue, if the
Honie be good.

With water it is to be boiled an houre at the least, euen vntill the water be euaporated: v. which thing is knowne by the bubbles that rise from the bottom: then, to make it more pure, put into every pound of Honie the * white of one Egge, and afterward skim it againe in the boiling. The fire may be more seruient at the first; but toward the end it must be slacke: for it is then apt to be set on fire, as the meere Honie, and to become bitter with violent heat.

The course Honie being boiled and clarified hath a pleasant taste, and is comparable for most vses to the purest bottom-honie being raw.

Which pure Honie, if you be disposed to boile it, will aske lesse time to be clarified, as yeelding litle or no skum at all: and in taste and vertue it is more excellent.

When your Honie is boiled enough, take it from the fire; and rather too soone, than too late: for if there bee any drosse remaining, you shall finde it in the top, when it is cold: but ouer-much boiling consumeth the spirituous parts of the Honie, and turneth the sweet taste into bitter.

8.
The quintessence
of Honie.

9.
The vertues of it.

And such is Honie in his owne kinde, both raw and boiled. It is also altered by distillation into a water, which *Raimundus Lullius* that excellent Chymist calleth the Quintessence of Honie. This Quintessence dissolueth Gold, and maketh it potable: likewise any sort of pretious stone that is put therein. It is of such vertue, that, if any be dying, and drinke two or three drammes thereof, presently he will reuiue. If you wash any wound there-with, or other sore; it will heale quickly. It is also good against the Cough, Catarrhe, and paines of the Melt, and against many other diseases. Being giuen for the space of six and fortie daies together to one that hath the Palsie, it helpeth him. Which thing

P. 3. *Of the fruit and profit of Bees.*

C. 10.

John Hester a Practicall Chymist, in his Key of Philosophie, professeth himselfe to haue proued. It helpeth also the falling sicknesse, and preserueth the body from putrefaction. Of so maruellous efficacie is this water.

The making of it is after this manner. Take two pound of perfect pure Honie, and put it into a great Glasse, that foure parts of siue may remaine emptie: * Lute it well with a Head and Receiuer, and giue it † fire vntill there appeare certaine white Fumes: which, by laying wet clothes on the Receiuer and Head, and changing them when they are warme, will turne into a water of a red colour like blood. When it is all distilled, keepe the Receiuer close shut, and let it stand till it be cleere, and of the colour of a Rubie. Then distill it in *Balneo Marie* seuen times; and so it will lose this reddish colour, and become yellow as Gold, hauing a great smell and exceeding pleasant.

* The Lute may be made of Clay, Flockes, and Salt-water, tempered together; or of Meale and whites of Egges.

† The Lute being first dried in the Sunne or by the fire.

Now as Honie is good by it selfe, either altered or in his owne kinde; so is it also being mixt with many other Simples: which here to declare would seeme but tedious and impertinent. Notwithstanding it shall not be amisse, in two or three instances, to giue you a taste of such Confections; and first of those that are inwardly, then of those that are outwardly receiued.

Of the first sort are Marmalade, and Marchpane, preserued Fruits, as Plums, and Cherries, &c. Conserues of Roses, Violets, &c. with Syrups of the like matter.

Marmalade is thus made. First boile your Quinces in their skins till they be soft: then, hauing pared and strained them, mix there-with the like quantitie of clarified Honie: and boile this together till it be so thicke, that in stirring (for you must continually stirre it for feare of burning) you may see the bottom; or, being cooled on a Trencher, it be thicke enough to slice: then take it vp and box it speedily. You may also adde a quantitie of Almonds, and Nut-kernels: also Cinamom, Ginger, Cloues and Mace, of each a like quantitie,

10.

The making of it.

11.

The vertue of
Honie in Confe-
ctions.

12.

Marmalade
made of Honie.

13.

Marchpane.

titie, pounded small and put into the Honie with the Quinces, and in boiling to be stirred together. This is very good to comfort and strengthen the stomack. For want of Quinces you may take Wardens, Peares, or Apples, and specially the Peare-maine, Giliflower, Pipin, and Roiall.

Marchpane may be made after this manner. Boile and clarifie by it selfe, so much Honie as you thinke meet: when it is cold, take to euery pound of Honie the white of an Egge, and beat them together in a Bafon, till they bee incorporat together and wax white, and when you haue boiled it againe two or three walmes vpon a fire of coles, continually stirring it, then put to it such quantitie of * blanchd Almonds or Nut-kernels stamped, as shall make it of a iust consistence: and after a warme or two more, when it is well mixt, powre it out vpon a Table, and make vp your Marchpane. Afterward you may ice it with Rose-water and Sugar. This is good for the Consumption.

* Steepe them a night in cold water, and the peeles will come off.

14.

Preserues.

Preserue Fruits after this manner.

The Damascens, or other Fruit, being gathered fresh from the tree, faire, and in their prime, neither Greene or sower, nor ouer-ripe or sweet, with their stalks, but cut short; weigh them, and take their weight in raw fine Honie: and putting to the Honie the like quantitie of faire water, boile it some halfe quarter of an houre, or till it will yeeld no skum: then hauing slit the Damascens in the dented side for feare of breaking, boile them in this liquor with a soft fire, continually skimming and turning them till the meat cometh cleane from the stone, and then take them vp. If the liquor be then too thinne, boile it more: if in the boiling it be too thick, put in more faire water, or Rose-water if you like it. The liquor being of a fit consistence, lay vp and preserue therein your Fruits.

If they be greater Fruits, as Quinces, Pipins, or the like; then shall it bee expedient, when you haue bored them through the middle, or haue otherwise coared them, to put them in as soone as the liquor is first skimmed: and then to let them boile till they be as tender as Quodlings.

Conserues

Conserues of Roses is thus to be made. Take of the juice of fresh Red Roses one ounce, of fine Honie * clarified tenn ounces, boile this together: when it beginneth to boile, adde of the leaues of fresh Red Roses clipt with Scissors in little pieces foure ounces, boile them to the consumption of the juice, and presently put vp the Conserues into some earthen vessell. Keepeit long therein: for in time it waxeth better and better. *Sylv. l. 3. de med. simp. mist.*

After the same manner is made Conserues of Violets. Syrup of Roses make thus. Steep fresh Roses in hot water ouer the Embers, (the vessell being couered) vntill the Roses wax pale: then straine out the Roses, and put fresh in their places, vntill they also are pale: this doe ten times, or vntill the water be red. And this being purged with Whites of Egges, (to euery pinte of liquor one) boile it gently with like quantitie of fine Honie, vntill it be of conuenient thicknesse. If you prepare it for present vses, the lesse boiling will serue: if you meane to keepe it, it requireth more, for which purpose the sunning of it is good. This purgeth a little, specially being new. *Sylv. Med. S. Mist. l. 3.*

Or thus. Steep one pound of Red Rose leaues in foure pound of water foure and twentie houres. When the water is strained, put vnto it two pound of fine Honie, and boile it to the thicknesse of a Syrup, taking off the skumme as it riseth. It tempereth the hot affections of the braine, it quencherth thirst, it strengthneth the stomacke, it procureth sleepe, and stayeth thin rheumes. *Fern. Meth. lib. 7.*

The Syrup of Violets is made, after the same manner, of fragrant Violets, and steeped vntill the liquor be blew. Being well boiled it may be kept a yeare without vinewing or corruption. It tempereth and purgeth hot and sharp humours; and therefore is good in a Pleurisie: it expelleth Melancholie, and the effects thereof, as head-ach, waking, dreaming, and heauinesse of heart: it is fit to be vsed before, and after purging. *Plantius in Fernel. meth. l. 7.*

If any man like better to make these Confections with Sugar, let them take the like quantitie of Honie: for Sugar

15.

Conserues.Mel rosatum.

* Cum vncijs
aquæ tribus
mediocriter
despumetur.
r. n. 7.

Mel violatum.

16.

Syrups.Syrup of Roses.

Syrup of Violets.

also hath with his sweetnesse a power to * preserue, as being a † kinde of Honie.

* Condiuntur fructus aut melle, aut Saccharo. *Fern. Meth. l. 4. c. 17. & Sylv. simpl. med. mist. l. 3.*

† Saccharum quod ex India & felici Arabia conuenitur, concrefcit in calamis: estque mellis species, nostrate certè minus dulce, sed similes ei vires obtinens, quod ad abstergendum, desiccandum, & digerendum pertinet. *Galen. de simpl. med. facult. lib. 7.* Item, Est & quoddam mellis concreti genus quod Saccharum nominant: quodque in India & felici Arabia in arundinibus reperitur. Saccharum est mel in arundinibus collectum. *Plin. l. 42. c. 8.* Saccharum mellis species cum sit, siccat quoque & abstergit. *Fern. Meth. l. 6. c. 12.*

17.
Honie to be preferred before
Sugar.

V. p. 2. m. 4. & 6.
R. n. 1. & 2.

But in respect of the maruellous efficacie, which fine v. and pure Honie hath in preseruing health, v. that grosse and earthy stuffe is no whit comparable to this Celestiall Nectar. Although some queint and Ladilike palats (whom nothing but that which is farre sought and deare bought can please) unhappily neglect it. In preseruing Fruits it hath more power through the viscositie thereof. Also Conserues, and Syrups being made with Honie * continue longer, and doe more kindly worke their effects. So that wee may conclude with *Ecclesiasticus, cap. 11. 3.* The Bee is little among such as flye: but hir Fruit is the chiefe of sweet things.

* Ex melle confectus Syrupus diutius asservatur; is quoque magis incidit, ac detergit. Ex Saccharo suavior, sed non æque efficax. *Fern. Meth. l. 4. c. 12.*

18
Honie good in
outward medicines.

19.
A salve for an
old sore.

Honie is vsed in outward medicines for diuers purposes: * not onely to conteine the other ingredients in forme of a Plaister; but also to open, to cleanse, to dry, to digest, and to resist putrefaction. And therefore it hath the predominance in that excellent Salve, called † *Unguentum Egyptiacum*: which serueth to cleanse and mundifie old sores, and to take away both dead and proud flesh. The receipt whereof is this. Of Verdegrece siue ounces, of strong Vineger seuen ounces, and of Honie foureteene: boile first the Honie and Vineger, and stirre them together: after a little while put in the Verdegrece, being pounded to powder: and then, stirring all together,

together, let them boile vntill the Ointment haue his iust thicknesse and Purple colour.

* Mel panaciæ & alijs quibusdam emplastris miscetur, ut corpus præbeat emplasticum, & præterea siccet, tergeat, digerat, à putredine vindicet. *Sylv. de med. simpl. mist. l. 3.* Mel calidum siccumque ordine secundo aperit, putredini obstitit, siccatur, deterget, expurgatque meatus & ulcera; nec ut sal, corporum substantiam coarctat. *Fern. Meth. l. 6. c. 12.*

† *Sylv. de med. simpl. mist. l. 3. sect. 10.* & *Fern. Meth. l. 7.*

Another of like vertue, but not so much corrosiue.

20
Another.

Boile a quart of good Ale in a Skillet to halfe a pinte, skimming off the froth as it ariseth: then put in a spoonfull of good Honie: and skimming still as need is, let it boile to the halfe, or till it be so clammy that being taken vp vpon a stickes end it will not drop, but string downe like clarified Honie.

What are the vertues and properties of *Meth* or *Hydromel*, may partly be knowne by that which hath beene said of Honie. For seeing Honie is the chiefe matter whereof it is made; it must needs, together with the substance of Honie, participate the naturall qualities thereof. The which, by the purifying in boyling, together with the acceſſe of sundry holsome ingredients, v. are rather confirmed and increased, than any way extenuated or diminished.

22.
The properties
and vertues of
Mede and Me-
thæglen.

Therefore saith Lobel, *Mulsam, ubi aqua plurimum mellis non multum, diuturnâ intestinâ, mellis ebullitione in vinum longè utilissimum abit.* And Pictorius, *Hydromel longâ vetustate transit in vinum stomacho convenientissimum.* Meth, when it is old, is a Wine most agreeable to the stomach: it recouereth (1) the appetite being lost, it (2) openeth the passage of the Spirit or breath, it (3) softneth the belly, it (4) is good for them that haue the cough. (5) If a man take it, not as his ordinarie drinke, but, as Physick, now and then; he shall receiue much benefit by it against Quartan Agues, against Cacexies, and against the diseases of the braine, as the *Epilepsie*, or the falling Euill: for which Wine is pernicious: it (6) cureth the Yellow Iaudise: it (7) is also good against Henne-bane with Milke, and against the

V. p. 2. n. 21, 22.
& 24.

Winter-

Winter-cherrie, it (8) nourisheth the bodie. (9) So that many haue attained to long old age, onely by the vse thereof. And therefore no maruaile that *Pollio Romulus*, who was an hundred yeares old, imputed the greatest cause of his long continued health to this Soueraigne drinke. (10) For being asked of *Augustus* the Emperour, by what meanes especially he had so long preserued that vigor both of minde and body, his answer was, *Intus mulso, foris oleo.*

(1. 2. 3. 4.) *Picorius*, & *Plin. hist. l. 22. c. 24.* (5) *Lobel.* (6. 7. 8. 9. 10.) *Plin. hist. l. 22. c. 24.*

22.
Meth much used
of the ancient
Britaines.

The same thing is more manifested by the generall example of the ancient *Britaines*: who, aboue all other Nations, haue euer beene addicted to *Meth* and *Methaglen*. For vnder Heauen there is no fairer people of complexion, nor of more sound and healthfull bodies. Of whose *Methaglen* *Lobel* writeth thus, *Cambricus ille potus Methagla, non patrio, uti putant illi, sed* Græco nomine dictus, est altera liquida & limpida Septentrionis theriaca.*

23.
Whence Meth
and Methæ-
glen haue their
name.

* *Hydromel borealibus, quibus vineta desunt, pro vino est. Ideoque Cambrijs à μέδῳ Meth dicitur. Pro qua voce Germani (quibus Teutonico idiomate solenne est D pro Th usurpare, ut in De, Dū, Dat, Dunder; pro The, Thū, That, Thunder) adeoque Angli etiam, alijque populi boreales à Germanis oriundi, corrupte dicunt Mede. Medonis plurimum bibunt Poloni & Litvani, quod Melle abundant, inquit Andreas Matthiolus. Methaglen vero, quod Hydromel est præstantius, à μέδῳ αἰγλήνῃ sive contractè αἰγλήν, id est, vinum splendidum denominatur: quòd (modò vetus sit & rite confectum) non minus colore succino, quam sapore & virtute præ vinis vineaceis splendeat. De hoc Mercator in Transylvania. Ex melle incolæ delicatum potum consciunt: qui etiam rerum peritis, vinum Creticum cum Maluaticum epinantibus, facile imponat. Et Vlysses Aldrovander de mulso. Fit præterea ex melle potus genus toti nunc Sarmatiæ, vicinisque Moscovitis familiare. Vnde etiam per totam Europam fere, præcipue per Germaniam devehitur. Decoquitur multipliciter aromatæ addito, (Medonem vocant) tam* nobile sepe ut lautiorum tantum mensarum sit, & primates solum bibant. Item Mercator in Bohemia de civitate Egra. Tota ornatissima, tota pulcherrima est. Intus pulchris ædificijs, civili urbanoque populo, magnificis & eximia virtute præstantibus viris illustris: foris vero amantissimis ac fecundissimis hortis & agris variisque pomorum ac fructuum generibus luxurians. Claret hodie hæc civitas ob Medonem (portionem ex melle) qui nullâ paratur quam in hac civitate excellentior.*

* Methæglen.

And as good and old *Methaglen* excelleth all Wines, as
well

well for pleasantnesse in taste, as for health; so being burnt it is better than any burnt Wine, for comforting and setting of a weake and sicke stomach, and for recreating the naturall heat.

The manner of burning it (if you know not) may be this. First set on the fire a * deepe Skillet or Kettle, almost full of water: when it boileth, put in a Pewter pot full of *Methaglen*: before that beginneth to boile, skimme it and put in two or three bruised Cloues, and a branch of Rose-marie: then beat the yolke of an Egge in a dish, put vnto it a spoonefull of the *Meth* cold, and stirre them together to keep the yolke from curdling: then put to that a spoonfull of the hot *Meth*: and after that an other, and an other, alwaies beating them together: and then, some and some, put all into the pot, still stirring it about. Then as soone as it boileth, take vp the pot, and, sauing your hands harmelesse, powre it into another warme pot of like capacitie, firing it as it runneth: and so brue it till it will burne no more. A *Methaglen*-posset is of the like vertue.

* The deeper the pot standeth, the sooner it boileth. You may, for a need, set the pot on the Harth in the midst of hot Embers: but take heed the flame melt not the Pewter.

WAX hath no certaine elementar qualitie, but is a meane betweene (1) hot and cold, and betweene dry and moist. It (2) mollifieth the sinewes, it (3) ripeneth and resolueth Vlcers. (4) The quantitie of a Pease in Wax, being swallowed downe of Nurces, doth dissolue the Milke curded in the paps, and (5) ten round peeces of Wax, of the bignesse of so many graines of Millet or Hempseed, will not suffer the Milke to curdle in the stomach.

Moreouer, it maketh the most excellent; light fit for the vses of the most excellent; for cleernesse, sweetnesse, neatnesse, to be preferred before all other: Which *Scaliger* in his *Enigmata*, giuing it the precedence, doth intimate.

Aut Apis, aut Hircus, vel pinguis viscera Pini.

Ostendere diem, post simul ante diem.

Z.

(1) *Galen*

24.
*The properties
and vertues of
natural Wax.*

(1) *Galen de simp. med. facul. l. 7. (2, 3, 4, 5.) Georgium Pictorium.* Cera flava magis emollit, relaxat, dolorem solvit: eoque illâ utimur ad abscessus calefaciendos, emolliendos, concoquendos, & maturandos. *Iohannes Guintherius Andernacus* Omnis cera mollior, calefacit, explet corpora: recens melior. Datur in sorbitione dysentericis, faviq; ipsi in pulve alicæ prius tostæ: adversatur lactis naturæ; ac milij magnitudine decem grana ceræ hausta, non patiuntur coagulari lac in stomacho. Si inguen tumeat, albam ceram in pube fixisse remedio est. Nec hujus ulus, quos mixta alijs præstat, enumerare medicina potest. *Pli. nat. hist. li. 2. cap. 24.*

25.

Artificiall Wax.

26.

To make white
Wax.

This naturall yellow Wax is by Art, for certaine purposes, made white, red, and Greene.

Wax is whited after this manner. Take the whitest and purest Wax: which, being cut into small peeces, put into an earthen vessell, and poure Sea water or Brine into it, as much as may suffice to boile it. And cast in also a little Niter: all this set ouer a soft fire. When it hath boyled vp twice or thrice, lift the vessell from the fire, and, the wax being presently cooled with cold water, take it out: and when you haue scraped off the dross, if any such hang on, and put it into other Salt water, seeth it againe. And hauing boyled vp twice or thrice, as before, lift it from the fire againe. And then take the bottom of an other earthen pot, or a little round board with a handle in the middle like a Churn-staffe, but without holes: and hauing first wetted the bottom of it in cold water, dip it into the hot vessell, and as soone as this wet bottom toucheth the wax, pull it out againe, and you shall haue sticking to the bottom a thin cake: which when you haue taken off, wet the bottom againe, and dip it as before: and thus doe till you haue taken vp all the wax in cakes. These cakes hang in the open aire vpon a line drawne through them, so that they may not touch one an other, besprinkling them with water in the Sun-shine vntill they be white. If any man would haue wax whiter, let him boile it oftner, and doe all other things in like manner as before.

Hanc dealbanda cera rationem docuit Dioscorides, l. 2. c. 105.

27.

To make red
Wax.

To make Wax red, Take to one pound of Wax, in Summer three ounces of cleere Turpentine, in Winter foure. These

These dissolve ouer a soft fire, and by and by take it off to coole a little. Afterward mix therewith the red Root of *Anchusa* or * *Vermilion*, well ground on a Marble or Glasse, and sweet Oile, of each one ounce: stirre all these and mix them well together. For want of *Vermilion*, they take three times so much red Lead, but that is not so good.

* *Cinabrium*.*Minium*.

To make greene Wax, take in stead of *Vermilion*, the like quantitie of *Vert-de-greece*.

28.
To make greene
Wax.

And such is Wax in his kinde, both Naturall and Artificiall. Naturall Wax is altered by distillation into an Oile of maruellous vertue. *Raymund Lull* greatly commendeth it, prouing it to be rather a Coelestiall or Diuine medicine than humane; because in wounds it worketh miraculously: which therefore is not so well allowed of the common Chirurgians. For it healeth a wound, be the same neuer so wide and big, being afore wide-stitched vp, in the space of eleuen daies or 12. at the most. But those that are small, this Oile healeth in three or foure daies, by annointing onely the wound therewith, and laying on a cloth wet in the same. It stayeth the shedding of the haire, either on the head or beard, by annointing the place therewith.

29.
Oile of Wax.30.
The vertues of it.

Also for inward diseases, this Oile worketh miracles, if you giue one drachme at a time to drinke with white Wine: for it is excellent in prouoking vrine which is stopped, it helpeth stitches and paines in the loines, it helpeth the cold Gout, or Sciatica, and all other griefes comming of cold.

The making or drawing of this Oile is on this wise. Take of pure new yellow Wax so much as will halfe fill your Retort or Body of Glasse: melt it on the fire, and then powre it into sweet Wine, wherein let it soake: wash it often, and wring it between your hands: then melt it againe and powre it into fresh Wine, wherein soake it, wash it, and wring it as before: and this doe seuen times, every time putting it into fresh Wine. When thus you haue purified the Wax,

31.
The making of
Oile of Wax.

P. 11. 10.

to euery pound thereof adding foure ounces of the powder of red Bricke finely bruised; put it all together into your Retort of Glasse well luted: v. then set the Retort into an Earthen pot, filling it round about and beneath with fine sifted Ashes or Sand; and set the pot with the Bodie in it on a Furnace, and so distill it with a soft fire. And there will come forth afaire yellow Oile, the which will congeale in the receiuer like Pap when it is cold. If you should rectifie this oile or distill it often, vntill it will congeale no more; then shall you make it ouer hot to take inwardly, and so quicke in the mouth, that you cannot drinke it downe. In the comming forth of this Oile, shall appeare in the Receiuer the foure Elements, the Fire, the Aire, the Water, and the Earth, right maruellous to see.

32.

The vertue of
Wax in com-
pound medicines.

So vertuous is Wax by it selfe, both in his owne kinde, and altered by distillation. It is moreouer of great vse mixed with others, and is the ground and foundation of *Cere-clothes* and *Salues*: whereof to set downe two or three examples shall not be amisse.

33.

A Cere-cloth.

A *Cere-cloth* or *Ceratium*, so called of *Cera*, doth consist chiefly of Wax and Oile mixed in such proportion, as may make the ointment of iust consistence: and therefore (1) being made in Summer, or compounded with Turpentine, Lard, Gum, Marrow, or any liquid thing, a greater quantity of Wax is required: and being made in Winter, or compounded with Rozin, Pitch, Metals, dried Hearbs, Powders, or any dry thing, a lesse quantity of Wax than Oile is convenient.

P. 11. 7.

The Ingredients being prepared, first melt the Wax, and whatsoeuer else of like nature, as Pitch, Suet, &c. in the Oile ouer a gentle fire, or in a double vessell, v. for feare of burning: when they are melted together, put in the Powders and other like Ingredients, if there be any: and as soone as you haue stirred them well together, (before the liquor be very hot) set it a cooling, and make your *Cere-cloth*.

A Cere-

P. 3. *Of the fruit and profit of Bees.*

C. 10.

A *Cere-cloth* to refresh the wearied Sinewes and tired Muscles is thus to be made. Take (2) Oile and Wax *ana* two ounces, Turpentine two drams, & Hony halfe an ounce.

To comfort the stomacke and helpe concoction, make a *Cerat* thus. Take (3) Oile of Masticke, of Mint, of Wormwood, of Nutmeg, and * Speeke, or any of these, and a convenient quantitie of Wax.

For the wormes in the belly of a childe or other, Take Wax and Rozin *Ana* one ounce, Treacle one spoonfull, Aloes two drams. Melt & mingle the Wax & Rozin together in a Pewter-dish, vpon a Chafing-dish and Coales : being melted, skimme it cleane : then taking it off, put in the Treacle, and stirre it among : then hauing pounded the Aloes to powder, strew it vpon, and stirre it in, so that it may not clod And if, by this time, it be too cold to come from the dish ; warme it a little vpon the Chafing-dish againe : then hauing wet the Table with Butter, poure it thereon, and worke it together with your knife : and so make it vp in a Roule. To make the Dish cleane, warme it, and wipe it with a woollen cloth.

This *Cerat* is to be applied to the Brest, and to the Nauell. For the Nauell, spread it vpon a round peece of Leather three inches ouer, with a hoale in the middle ; that, the Nauell comming through, the plaister may lie both closer and faster : and for the Brest, spread it vpon a square peece three inches broad, and twice so long : and lay it athurt the Brest, betweene, or close vnder the Paps.

This doe twice together, and let the Plaisters remaine each time vpon the place, vntill the heat of the stomacke haue dried them, and made them loose : which, in some that are much troubled with the wormes, will be within foure and twentie houres ; although in some they will sticke a whole weeke together.

(1) Fern. Meth. lib. 4. c. 19. & 20. (2) Fern. Meth. l. 4. c. 19. (3) Fern. Meth. l. 5. c. 22.

For example of a Salue, take *Emplastrum de ianna*, marvellous effectuall in curing greene wounds and new vlcers.

34.
A Cere-cloth to refresh the Sinewes and Muscles.

35.
A Cere-cloth to comfort the stomacke.

* Nardinum.
36.
A Cere-cloth for the Wormes.

37.
A Salue for greene wounds.

It asswageth inflammation, it cleanseth, it closeth, and filleth with flesh, and maketh whole. It is thus made : * Take the juice of Parsley, Plantan, and Betonie, *ana* one pound : Wax, Pitch, Rozin, and Turpentine, *ana* halfe a pound : boile the Wax, Pitch, and Rozin in the Iuices, softly stirring all together, vntill the quantitie of the Iuices be wasted : and then taking them off the fire, put in the Turpentine, and mix it with the rest.

Another of like effect.

^{38.}
An other.

Take Deere or Mutton-Suer, Wax, Rozin, *ana* two ounces : Turpentine one ounce : boile these together, and skim them : then take this liquor from the fire, and, when it is somewhat cooled, put in two handfulls of the Tops of vnsuet Hysop, and stirre it about, and setting it ouer the fire againe, boile it softly about a quarter of an houre, till it be greene : and then straine it, and let it coole. This is chiefly to bee made in *May*, because then the Hysop is in his prime.

* Sylvius de medicam. simpl. mist. lib. 3. & Fern. Meth. lib. 7.

Gervais Markham hath written a small treat of Bees also, wherein are some fols. small notes, differing from what are here written; yett seeme to be good and very allowable.

P S A L. III. V. 2.

*Magna opera I E H O V A E, exquisita
ab omnibus qui delectantur in illis.*

FINIS.



*This very curious book, is quoted by
Dr. Johnson in his dictionary.*

Bees considered Females by Aristotle C 4. 11.
Proodoffers called Schadrons D. C 4. 20
Queen's or Royal Eggs not converted into
Larvae but at once become Immoths C 4. 10
Proodoffers called Cophens C 4. 20
Artificial Luearns. p 69 — C 5. 25
Ambrosia or Fauna of Queens not Wax. C 6. 23



Wootton St. Lawrence Church, Basingstoke, Hampshire.

The Reverend Charles Butler, M.A. (1561-1647).

Father of English Bee-Keeping.

Grammarian and Musician.

In the left-hand light Butler is shown in his clerical robes, holding his lovely chalice in one hand, and in the other hand his great bee-book, "The Feminine Monarchie," written at Wootton in 1609. Behind him is a reproduction of the delightful drawing in this book (the honeycomb) with the outer inscription, SOLERTIA ET LABORE. On the left are the arms of Magdalen, Oxford, where he studied from 1579. Below again is Butler preaching from his pulpit at Wootton, and his final words from St. Paul's Epistle to Titus in his fifth and last book, "The Principles of Music," written in 1636. At the apex of this light are the arms of the Diocese of Winchester, where Butler worked for 52 years.

In the right-hand light at the top is a figure of St. Cecilia, Patron Saint of Music, and in the medallions below are the Norman Church of Nateley Scures, Hampshire and the thirteenth century Holy Ghost School, Basingstoke, with the dates of Butler's work as Rector and Headmaster, 1595-1600. Running through the two lights, below again, is the Church of St. Lawrence, Wootton, as it was in Butler's time as Vicar, 17th November, 1600—29th March, 1647. Below again are the old beehives. At the side here is the badge of Queen Elizabeth I, 1558—1603 (the Tudor rose), with the motto, ROSA SINE SPINA. Other little items in this light are the four bells of Wootton, 1625, with their inscriptions, and the fifteenth century font in which Butler baptised his daughter, Elizabeth, whom he called his "honey-girl," because the hives which he gave her in 1612 produced a dowry of £400 at her wedding in Wootton Church to the Reverend Richard White, great grand uncle of the naturalist, Gilbert White, of Selborne, Hampshire.

In the quatrefoil tracery above these two lights are the cypher of our present Queen Elizabeth II, and the national emblems of England (rose), Wales (leek), Scotland (thistle) and Ireland (shamrock). The window is a memorial also of the Coronation Year, 1953.

This window was designed by Gerald E. R. Smith (A. K. Nicholson Stained Glass Studios, 35 Circus Road, St. John's Wood, London, N.W.8). It is in the north aisle of the Hampshire Village Church of Wootton St. Lawrence, three miles west of Basingstoke. The Very Reverend E. G. Selwyn, D.D., Dean of Winchester Cathedral, whose predecessor, Dr. George Abbot, appointed Butler to this living on 17th November, 1600, is to dedicate the window on 14th November, 1954. A brochure on CHARLES BUTLER can be obtained from the Reverend F. R. MONEY, M.A., R.D., Wootton St. Lawrence Vicarage, Basingstoke.

Photograph by H. A. Aylward and Son, Basingstoke.



The Church of
Wootton St. Lawrence.
N. Aisle Window.



Gerald E. A. Smith.
art. & del.

